ARI Research Note 99-25

Modification of the Computer Adaptive Screening Test (CAST) for Use by Recruiters in All Military Services

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April 1999

U.S. Army Research Institute
for the Behavioral and Social Sciences

U.S. Army Research Institute for the Behavioral and Social Sciences

A Directorate of the U.S. Total Army Personnel Command

EDGAR M. JOHNSON
Director

Research accomplished under contract
for the Department of the Army

Human Resources Research Organization

Technical review by

Michael G. Rumsey

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave Blank)*	2. REPORT DATE April 1999	3. REPORT TYPE AND DATES COVERED Final Report, September 1996 - June 1997

4. TITLE AND SUBTITLE Modification of the Computerized Adaptive Screening Test (CAST) for Use by Recruiters in All Military Services	5. FUNDING NUMBERS MDA903-93-D-0032 (Delivery Order 0054) 2Q162785A791 2210C1
6. AUTHOR(S) James R. McBride, and R. Ross Cooper	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Human Resources Research Organization (HumRRO) 66 Canal Center Plaza, Suite 400 Alexandria, Virginia 22314	8. PERFORMING ORGANIZATION REPORT NUMBER FR-WATSD-97-24
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences 5001 Eisenhower Avenue Alexandria, VA 22333	10. SPONSORING/MONITORING AGENCY REPORT NUMBER Research Note 99-25
11. SUPPLEMENTARY NOTES Contracting Officer's Technical Representative, Ms. Frances Grafton	
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited.	12b. DISTRIBUTION CODE

13. **ABSTRACT** ***(Maximum 200 words)***

The Computerized Adaptive Screening Test (CAST) was designed to predict performance on the Armed Forces Qualification Test (AFQT). It includes two subtests: Word Knowledge (WK) and Arithmetic Reasoning (AR). CAST has been used by Army recruiters since the early 1980's to prescreen enlistment prospects. The Joint Recruiting Information Support Systems Program Management Office (JRISS PMO) program requested modifications to CAST to make it suitable for use by recruiters in all of the U.S. military services. This report documents the development of CAST, Version 5.

14. SUBJECT TERMS CAST, Adaptive testing, AFQT			15. NUMBER OF PAGES 143
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL

NSN 7540-01-280-5500

Standard Form 298 (Rev 2-89)
Prescribed by ANSI Std 239-18 298-102

HumRRO

FR-WATSD-97-24

CONTRACT FOR MANPOWER AND PERSONNEL RESEARCH AND STUDIES (COMPRS) FOR THE U.S. ARMY RESEARCH INSTITUTE (ARI)

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FINAL TECHNICAL REPORT

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Submitted to:

U.S. Army Research Institute for the Behavioral and Social Sciences
5001 Eisenhower Avenue
Alexandria, VA 22333

Contract Number MDA903-93-D-0032
Delivery Order 0054
Clin No. 0002AB

September 10, 1997

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Modification of the Computerized Adaptive Screening Test (CAST) for Use by Recruiters in all Military Services

Introduction

This report describes Version 5 of CAST, the Computerized Adaptive Screening Test. CAST is a screening test for use by military recruiters to forecast a prospect's performance on the Armed Forces Qualification Test (AFQT), as well as on two of its components, the Word Knowledge (WK) and Arithmetic Reasoning (AR) sections of the Armed Services Vocational Aptitude Battery (ASVAB).

CAST was originally developed for use by Army recruiters, as described by Sands and Gade (1983). Since its introduction in the early 1980's, it has undergone one major psychometric revision, and has been modified for use on a succession of microcomputer models. Wise, McHenry, Chia, Szenas and McBride (1989) described the psychometric revision, which was first implemented in Version 2 of CAST. Prior to the development summarized in this report, the most recent version of CAST was Version 4, which was described by Park and Dunn (1991). CAST 4, like earlier versions, was used only by Army recruiters.

The development of CAST 5 was sponsored by JRISS, the Joint Recruiting Information Support System, for use by recruiters of all of the Armed Services. CAST 5 updates the previous version in several significant ways. For one, CAST 5 has been developed specifically for use on computer systems with Intel Pentium and compatible processors, under the Microsoft Windows 95 or Windows NT operating environment; it is not compatible with earlier computer models or previous operating systems. Aside from this, the most noticeable difference between CAST 5 and previous versions is the user interface. Previous versions of CAST presented instructions, test questions, and score reports in a monochrome display format, using the computer keyboard as the exclusive means of entering data and answering test questions. In contrast, CAST 5 uses a color graphic user interface, with the option of using a computer's keyboard or its "mouse" pointing device to navigate through the program.

CAST 5 is also designed to predict AFQT scores more accurately than previous versions. To make this possible, CAST 5 administers more test questions than CAST 4, and adjusts test length to enhance accuracy at the 31st and 50th AFQT percentiles. Because it administers more test questions, CAST 5 can be expected to take somewhat longer to administer than previous versions. Even with the additional length, CAST 5 will generally take less than 25 minutes to administer.

The remainder of this report describes CAST 5 in more detail. The report is aimed at two different audiences: (1) personnel researchers and psychometricians, who will be interested in CAST's measurement and score prediction features; and (2) information systems managers and technicians, who will be more interested in features of the CAST 5 software system. Although the report is not intended to be a guide for CAST 5 test administration, in the interests of completeness, a Users' Guide is included as Appendix A.

This report contains three major sections. First is a Psychometrics section; beginning with some background on previous CAST versions, it treats CAST 5 as a psychometric application, and proceeds to describe psychometric features and issues that are specific to CAST 5. Second is a System Description section; it treats CAST 5 as an automated data system, and includes technical information that will be useful in the operation, maintenance and revision of its software. Third are the Appendixes. These include the Users' Guide, and a copy of the CAST 5 source code.

CAST 5 Psychometrics

This section addresses certain aspects of CAST 5 as a system for mental measurement and for forecasting examinees' scores on the AFQT and on ASVAB's WK and AR tests.

Background

CAST is a battery of two computer-administered adaptive tests -- WK and AR. The tests are called "adaptive" because each of them uses the computer software to tailor test difficulty to the examinee's ability by selecting test questions one at a time, contingent on the test-taker's performance. Scores on these two CAST subtests are used as the basis for forecasting the examinee's AFQT score, using relationships between WK, AR, and AFQT scores that were established in previous CAST research.

CAST is not the only screening test available to recruiters for the purpose of predicting prospects' AFQT performance. The Enlistment Screening Test (EST) was designed for the same purpose (Mathews & Ree, 1982). Unlike CAST, the EST was designed as a paper-and-pencil test. Although research has shown that CAST is somewhat more accurate than EST for predicting AFQT scores, the chief advantage of CAST over EST is efficiency. CAST is adaptive; adaptive tests typically achieve the measurement precision of conventional tests in half the latter's length. Indeed, previous versions of CAST were as short as 15 questions in length and took less than 20 minutes to administer. This is in contrast with EST's much greater test length, and its administration time of 45 minutes. Recently, a computer-administered version of the EST has appeared, called the Computerized Enlistment Screening Test (CEST). Like CAST, it is computer-administered. CEST is not adaptive, however, and is considerably longer than CAST, both in terms of the number of test items given and test duration.

CAST was originally developed for use in the Army's JOIN (Joint Optical Information Network) computer system. CAST Version 1 administered 10 WK and 5 AR test questions. These two tests were selected adaptively from data banks containing fewer than 100 questions in each subject area. The first revision of CAST, reported by Wise et al. (1989), developed much larger banks of test questions to replace the earlier ones. All subsequent versions of CAST have used these two expanded item banks, which contain 257 WK and 254 AR test questions. CAST Versions 2 through 4 administered a few additional test questions to enhance measurement precision for individuals performing below specified score thresholds.

CAST 5 preserves most of the psychometric features of its predecessor, CAST 4. For example, it uses the same (1) test item banks (257 WK items and 254 AR items calibrated by Wise et al., 1989); (2) sequential technique for updating ability estimates after each test item (the Bayesian sequential updating procedure described by Owen, 1975); (3) parameters of the normal prior distributions on ability (mean 0, variance 1); and (4) adaptive item selection criterion (local values of test item information functions).

Changes Introduced with CAST 5

CAST 5 differs from CAST 4 psychometric features in the following ways: (1) longer test length for both the WK and AR subtests; (2) use of adaptive test length during the AR test; (3) imposition of a time limit on the AR test; (4) increased use of randomization in the item selection/exposure control process. Each of these differences is described in more detail below.

Longer test length. CAST 4 had developed a reputation for inaccuracy among some recruiters. Although there are no systematic data to support that reputation, and ample data (Knapp & Pliske, 1987; Wise et al., 1989) to refute it, it had become part of the lore of CAST. In response to that lore, other means of screening prospects were said to be preferred over CAST. These include the paper-and-pencil EST and the computer-administered CEST.

To counter the impression that CAST is less accurate than the alternatives, priority in the development of CAST 5 was given to improving CAST's precision. One means of improving measurement precision is to increase test length; this has been done in CAST 5. The length of the WK test in CAST 5 has been set to 15 items; in contrast, CAST 4 gave 10 to 15 WK items, depending on the examinee's performance. CAST 5 administers 7 to 12 AR items; CAST 4's AR tests were 5 to 10 items in length.

Variable test length. The length of the AR test is adaptive. The minimum length is set by the ARLength argument in CAST.INI; this value was 7 at release time. The maximum length is set by the MaxARLength argument. After 7 AR items have been administered, the test will stop unless the predicted AFQT score is in the critical range specified by two other arguments in CAST.INI: LowAFQTCutoff and HighAFQTCutoff. Following the 7th and subsequent items, the AR test will continue, until MaxARLength items have been given, if the predicted AFQT score is between the upper and lower bounds of the critical range described below. At release time, MaxARLength was set at 12 items. At any point after the 7th and subsequent AR items, if the updated value of the predicted AFQT score falls outside the critical interval, the test will stop. Thus, the length of the AR test can be 7, 8, 9, 10, 11, or 12 items.

The new CAST test lengths reflect previous research (Knapp, 1987) that established CAST's predictive validity for all combinations of WK test lengths from 5 to 15 items, and AR test lengths from 5 to 10 items. That research demonstrated that the multiple correlation of CAST with AFQT increased from .82 to .84 as WK and AR test lengths were increased from 5 WK and 5 AR items to 15 WK and 10 AR items. As test length increased, Knapp reported a corresponding decrease from 14 to 13 in the standard error of CAST estimates of AFQT scores. By making the length of the AR test contingent on the predicted value of the AFQT score, CAST

5 aims to improve the precision of AFQT score estimates in the neighborhood of the lower and upper critical points specified in CAST.INI. At release time, the two points of interest were the 31st and 50th AFQT score percentiles. Allowing for a 13-point standard error of estimate, the critical range becomes 18 to 63. During CAST 5's AR test, the predicted AFQT score is recalculated after the 7th and subsequent test items; if it is between 18 and 63, additional AR test items will be administered until the maximum length is reached.

Time limit. CAST 4 was administered without time limits; in some cases, recruiters observed that some prospects had very long test times, largely due to slow work on the AR portion of the test. Sponsors of CAST 5 development requested a time limit of 25 minutes on that part of the test. Accordingly, the CAST 5 software includes a timer; the AR test is stopped after 25 minutes have elapsed on that part of the test.

When the AR test time limit is reached, a penalty function is applied to the AR test score to prevent high AR scores that could result as an artifact of the adaptive ability estimation procedure. Segall, Moreno, Bloxom and Hetter (in press) reported development of a similarly motivated procedure for use in the computerized adaptive version of the ASVAB (CAT-ASVAB). In CAST 5, if the examinee has not completed at least 7 items after 25 minutes have elapsed, the ability estimate is updated as if the examinee gave wrong answers to the unreached portion of the 7-item minimum test length; this is a somewhat more stringent penalty function than the one used in CAT-ASVAB, where the penalty computation assumes random responses, rather than wrong ones.

Item selection/item exposure control. In CAST 5, the criterion for adaptive selection of the next test item is identical to CAST 4, with the following exception: In CAST 5, the next item selected is always randomly chosen from a set containing the 5 currently optimal items. In CAST 4, the size of the candidate item set diminished from 5 to 1 item as the test progressed; after the fifth item in each test, the optimal item was always selected. This resulted in predictable sequences of test items in certain circumstances, particularly after answering the first 4 items all wrong or all right. Selecting an item at random from among the best set of 5 will reduce the incidence of repeated sequences of the same questions.

CAST 5 also differs from CAST 4 in terms of the mechanism used for item exposure control. At each stage in CAST 4, each item in the list of locally optimal test items was excluded from use later in the same CAST test. CAST 5 excludes only those items that are actually administered -- not the other 4 candidate items at each stage. This will effect a small improvement in psychometric precision within CAST's WK and AR subtests, at the expense of item exposure control. Thus CAST 5's only mechanism for item exposure control is random selection from the locally best 5-item set at each stage.

CAST's Prediction of ASVAB Performance

AFQT percentile prediction. CAST 5 uses the same formula as CAST 4 for forecasting the examinee's AFQT score: a linear multiple regression equation for estimating the AFQT percentile from the examinee's scores on the two adaptive CAST tests, WK and AR. The equation is as follows:

$$\text{CAST 4 Forecast AFQT Percentile} = 14.41\ \text{WK} + 11.18\ \text{AR} + 42.775$$

In this equation, WK and AR are CAST's internal estimates of examinee ability on the respective tests. The scale used for WK and AR is the "theta" metric. CAST scores on that metric typically vary between -3 and +3, with mean 0 and approximately unit variance.

Since the introduction of the original version of CAST, linear multiple regression has been used as the basis for AFQT prediction. Early CAST technical reports (e.g., Knapp, 1987; Knapp & Pliske, 1986) documented the development and validation of CAST regression parameters, but did not list their values. The most recent report of research to develop an equation for predicting AFQT scores from CAST was that of Wise et al. (1989), who developed CAST Version 2, which included the current CAST WK and AR item banks. With the introduction of the new item banks it was necessary to develop a new regression equation; Wise et al. reported the details of that development, and listed the parameters of their regression equation as:

$$\text{Wise et al. Forecast AFQT Percentile} = 9.50\ \text{WK} + 10.27\ \text{AR} + 56.11$$

This equation states the regression parameters developed for CAST 2. It predicts substantially different AFQT score values than does the CAST 4 equation above. For example, if the values of both WK and AR are 0, the Wise et al. equation predicts an AFQT score of 56, while the CAST 4 equation predicts a 43 (both predictions have been rounded to the nearest integer). Even larger differences occur at lower WK and AR values. The origin of the CAST 4 regression parameters is not documented, although their values are listed in the report by Park and Dunn (1991).

AFQT category prediction. In addition to predicting point values of examinees' AFQT percentile scores, CAST estimates the probability that the examinee's AFQT score will fall into each of three AFQT score bands[1]. These are as follows:

Category	AFQT Score Band
I - IIIa	50 - 99
IIIb - IVa	31 - 49
IVb - V	1 - 30

1 Although CAST 5, like CAST 4 before it, calculates these AFQT category probabilities, the probability values are not included in CAST 5 score reports. They are, however, recorded in examinee data files.

Thus, the first of these probability statements addresses the likelihood that the examinee will attain a score of 50 or above. This is a critical value in recruiting, because enlistment incentives are sometimes contingent on AFQT scores in the top half of the percentile scale, and because the proportion of enlistees in that range is used as one indicator of the overall quality of military personnel accessions.

The second two AFQT score ranges above are also important in recruiting because accession policy often prohibits enlistment of candidates with AFQT scores below the 31st percentile. CAST's probability statements allow a recruiter to judge the odds that a candidate will score above or below the 31st percentile threshold.

These probability statements are computed by means of logistic regression equations, which express the probability of these discrete events as functions of CAST WK and AR scores. The regression equations were developed by Wise et al. (1989); the values of the logistic regression parameters are listed in that report.

CAST 5 Software

System Requirements

CAST 5 is a 16-bit application program designed specifically for use on computers using Intel Pentium and equivalent microprocessors under the Microsoft Windows 95 or Windows NT operating environment. As released, CAST 5 is not compatible with earlier Windows versions, and has not been tested for compatibility with non-Pentium processors.

Test Administration Program

CAST 5's test administration program was written with the Microsoft Visual Basic system, version 4. The source code was compiled into executable form using the version 4 Visual Basic compiler, and an installation program was created using the Microsoft SETUP Wizard. Appendix B contains complete source code listings for the version delivered to JRISS (CAST 5 version 1.15).

Provisions for User Control of Some CAST Features

Some of the features of CAST can be changed by the user without the need to revise the CAST software. These features are controlled by specifications recorded in CAST.INI, an ASCII text file included with CAST 5. The user can change them simply by editing the values recorded in CAST.INI.

Table 1 displays the contents of CAST.INI at release time. Each line in the display is numbered; the function of each numbered line is discussed below.

Lines 1 and 2 contain the software version and its release date; these lines should be updated with each revision of CAST.

Lines 3 and 4 specify path and file names for respectively: (1) the database file containing CAST 5 instructional screen text, test item text, test item parameters, and adaptive item selection tables (information tables); and (2) the database file to be used for detailed test records. The item database file contains both regular (calibrated) test items and experimental test items. The test records database stores data recorded at the item response-level. Both of these files must be specially formatted for use by CAST.

Line 5 specifies the data path CAST 5 will use for access to other data files it needs. Line 6 specifies the file containing the bitmap image that will be used as the background of the main menu screen.

Lines 7 through 10 specify colors used in CAST 5 displays, including the display foreground and background colors, and the normal and highlighted colors used to display response alternatives.

Lines 11 and 12 specify the positions in the test item database file containing the test used in the initial and final instructional screens. Line 13 specifies the character font size, in points.

Line 14 sets the time limit, in minutes, used for the AR subtest.

Lines 15 through 17 are the values of logical toggles that control certain software options; if the value is 0, the toggle is false; -1 sets it to true. When these toggles are set to true, the options are enabled. Line 15 toggles a debug feature. Line 16 toggles test item review; when this toggle is set to -1, CAST displays every test question in the database, up to the limits specified in lines 18 and 19; when it is set to 0, CAST is administered normally. Line 17 toggles on or off the display of detailed psychometric data after each test item; this feature is used to check and debug adaptive item selection and ability updating calculations.

Lines 18 and 19 specify the number of adaptive test items in the database for WK and AR, respectively. Lines 37 and 38 specify the number of experimental test items for WK and AR.

Lines 20 through 26 govern the length of the two adaptive tests. Line 20 sets the minimum number of WK items to be administered; line 21 sets the minimum for AR. Lines 22 and 23 govern the administration of additional adaptive WK items; the number is specified in line 22, and will be administered if the WK ability estimate falls below the threshold specified in line 23. Lines 24 through 26 govern the administration of additional AR items; these will be administered if the predicted AFQT score lies between specified lower and upper bounds. Line 24 specifies the maximum number of additional AR items; lines 25 and 26 specify the critical lower and upper predicted-AFQT boundaries.

Lines 27 through 32 specify the parameters for two logistic regression equations. The first equation estimates the probability that the examinee's AFQT score will be in AFQT categories 1 through 3a; that is, between 50 and 99 inclusive. The second equation estimates the probability the AFQT score will be in category 3b or 4a: between 31 and 49. Input variables to these two logistic regression equations are CAST's internal estimates of ability (theta) in the WK and AR domains.

Lines 33 through 35 specify the parameters of the linear multiple regression equation CAST uses to predict the examinee's AFQT percentile score. Input variables to these two logistic regression equations are the same ones used for the logistic regression: CAST's internal estimates of ability (theta) in the WK and AR domains.

Lines 36 and subsequent lines contain parameters that control the optional administration of experimental test items in the CAST tests. Experimental items can be embedded in WK, AR, or in both tests. Lines 36 and 37 specify the size of the experimental WK and AR item banks, respectively. Lines 38 and 39 specify the number of experimental WK and AR items, respectively, to be administered. If either or both of line 38 and 39 is greater than 0, the following lines must contain specifications for the serial positions of the experimental items, and the number of experimental items at each serial position.

Table 1. The CAST.INI file, with values included in the first release of Cast 5.

Line	Contents	Description
1	5.15	Software version number
2	04/23/97	Version release date
3	c:\wincast\cast.mdb	Test questions database file
4	c:\wincast\examinee.mdb	Test results database file
5	c:\wincast\	Path name for other files
6	c:\wincast\jrislogo.bmp	Bitmap file for main menu screen
7	0 Forecolor	Foreground color control code
8	7 Backcolor	Background color control code
9	4 Distractor Color	Color used for response alternatives
10	11 Highlight Color	Color used to highlight alternatives
11	1 IntroScreen Start	"Item number" of first instructions text
12	5 IntroScreen End	"Item number" of last instructions text
13	12 Font Size	Point size for test item display fonts
14	25 AR Time Limit	Time limit (minutes) for AR test
15	0, Debug flag	Toggle (0/1) debug mode
16	0, Display all items?	Toggle (0/1) display of entire item bank
17	0, Display psychometrics?	Toggle (0/1) for psychometric data display
18	257, WK item bank size	Number of WK items in CAST database
19	254, AR item bank size	Number of AR items in CAST database
20	15, WK minimum length	Minimum length of WK test
21	7, AR minimum length	Minimum length of AR test
22	0, WK additional length	Number of extra WK items permissible
23	0.00, Critical value for WK	Threshold value for extra WK items
24	5, AR additional length	Number of extra AR items permissible
25	18, Critical AFQT minimum	Lower AFQT bound for extra items
26	63, Critical AFQT maximum	Upper AFQT bound for extra items
27	-2.57, LR WK parameter 1	WK logistic regression value for CAT 1-3a
28	1.96, LR AR parameter 1	AR logistic regression value for CAT 1-3a
29	0.27, LR constant 1	Logistic regression constant for CAT 1-3a
30	-2.00, LR WK parameter 2	WK logistic regression value for CAT 3b
31	1.49, LR AR parameter 2	AR logistic regression value for CAT 3b
32	2.36, LR constant 2	Logistic regression constant for CAT 3b
33	14.41, LMR WK parameter	WK linear regression parameter for AFQT AR
34	11.18, LMR AR parameter	linear regression parameter for AFQT
35	42.775, LMR constant	Linear regression constant for AFQT
36	96, WK exper. item bank size	Number of experimental WK items in bank
37	96, AR exper. item bank size	Number of experimental AR items in bank
38	0, Give N exper. WK items	Number of experimental WK items to give
39	0, Give N exper. AR items	Number of experimental AR items to give
40	0, 0 Position exper. WK items	Serial position of experimental WK items
41	0, 0 Position exper. AR items	Serial position of experimental AR items

Item Bank Utility Program

CAST 5 draws its test questions from two banks of operational questions, and two banks of experimental questions. The operational banks contain 257 WK and 254 AR questions; these questions are the source of adaptive CAST tests administered to individual examinees. CAST is also capable of embedding a small number of experimental items within each test; such items do not affect the CAST test scores, but response data are recorded for research purposes. CAST 5 includes 98 items in each of two experimental banks: WK and AR.

All of the CAST test questions -- operational as well as experimental -- are contained in an encrypted Microsoft Jet database file, CAST.MDB. The same file contains the text of CAST's instructional screens and help screens. The file contains tables of CAST item parameters: difficulty, discrimination, and lower asymptotes are recorded for each item. Additionally, CAST.MDB contains CAST's adaptive item selection tables.

A utility program (Project1.VBP) that accompanies the CAST 5 source code makes it possible to edit UCAST.MDB, the unencrypted version of CAST.MDB. This might be desirable in order to modify the text of CAST instructional or help screens, or to correct errors if any are found in the item bank text or answer keys. If it becomes necessary to make corrections to the CAST.MDB file, the corrections must be made in two stages, as follows: 1) Make corrections to UCAST.MDB, by means of the utility program. 2) Encrypt the corrected database file, saving the encrypted file as "CAST.MDB." The encryption can be done in either of two ways. One is to use the encryption/decryption utility function of Visual Basic 4. The other is to use Microsoft ACCESS Version 2 database software to encrypt UCAST.MDB, creating a revised version of CAST.MDB. In the encryption process, CAST.LDB is automatically updated.

It is important to remember that changing item text or answer keys may have a significant impact on the psychometric properties of CAST and should not be done except in the most extreme circumstances. Whenever changes are made to UCAST.MDB, creating a revised CAST.MDB, the user should edit lines 1 and 2 of the CAST.INI file to update the software version number and release date.

CAST 5 Software Files

Distributed file list. CAST 5 is distributed on a 3-disk installation package created by means of the Microsoft Setup Wizard program. The SETUP.EXE program included in that package installs CAST 5 program and support files, as well as Windows system files, on the user's computer. All CAST 5 files are to be installed in a directory named WINCAST on the host computer's C: drive. The SETUP.EXE program installs Windows system files in the Windows 95 or Windows NT directories, as needed. In general, SETUP installs Windows system files unless it finds a current version of the file already present. If one of the necessary system files is missing, SETUP installs it; if the file is present but outdated, SETUP installs the newer version.

Table 2 contains a list of the CAST 5 program, support, and system files. In general, CAST 5 will not run properly if any of its program or support files are missing from the C:\WINCAST directory, or if the system files listed are missing or outdated.

Table 2. Critical Files Installed or Updated by the CAST 5 SETUP Program.

File Name	Path Name	File Date	File Size	Version
[bootstrap]				
SETUP1.EXE	$(WinPath)	1/12/1996	138144	4.0.0.2422
VSHARE.386	$(WinSysPath)	1/12/1996	14933	3.11.0.401
STKIT416.DLL	$(WinSysPath)	1/12/1996	5120	4.0.2422.0
VB40016.DLL	$(WinSysPath)	1/12/1996	935632	4.0.24.22
OC25.DLL	$(WinSysPath)	8/15/1995	536048	2.53.0.0
OLE2.DLL	$(WinSysPath)	1/12/1996	304640	2.3.125.142
TYPELIB.DLL	$(WinSysPath)	1/12/1996	177824	2.3.3025.1
OLE2DISP.DLL	$(WinSysPath)	1/12/1996	164960	2.3.3023.1
OLE2PROX.DLL	$(WinSysPath)	1/12/1996	51712	2.2.120.121
OLE2CONV.DLL	$(WinSysPath)	1/12/1996	57328	2.1.0.1
STORAGE.DLL	$(WinSysPath)	1/12/1996	157696	2.3.125.140
COMPOBJ.DLL	$(WinSysPath)	1/12/1996	109056	2.3.125.142
OLE2.REG	$(WinSysPath)	1/12/1996	28113	
OLE2NLS.DLL	$(WinSysPath)	1/12/1996	152976	2.3.3023.1
STDOLE.TLB	$(WinSysPath)	1/12/1996	5472	2.3.3023.1
SCP.DLL	$(WinSysPath)	1/12/1996	12976	2.0.260.0
VAEN21.OLB	$(WinSysPath)	1/12/1996	35200	2.0.0.5422
CTL3DV2.DLL	$(WinSysPath)	9/9/1995	27632	2.31.0.0
[Files]				
DAO2516.DLL	$(WinSysPath)	1/12/1996	543584	2.50.0.1626
MSAJT200.DLL	$(WinSysPath)	8/15/1995	995136	2.50.0.1606
MSJETERR.DLL	$(WinSysPath)	11/18/1994	11232	2.50.0.1111
MSJETINT.DLL	$(WinSysPath)	11/18/1994	15936	2.50.0.1111
VBAJET.DLL	$(WinSysPath)	1/12/1996	2920	2.0.0.5422
VBDB16.DLL	$(WinSysPath)	1/12/1996	86848	4.0.24.22
WINCAST.EXE	$(AppPath)	4/23/1997	145424	1.0.0.0
CAST.LDB	$(AppPath)	4/23/1997	64	
CAST.MDB	$(AppPath)	4/23/1997	262144	
CASTLOGN.BMP	$(AppPath)	3/4/1997	185398	
ENDTEST.BMP	$(AppPath)	4/3/1997	460918	
EXAMINEE.LDB	$(AppPath)	4/23/1997	64	
EXAMINEE.MDB	$(AppPath)	4/23/1997	229376	
FEEDBACK.BMP	$(AppPath)	4/9/1997	460918	
MOVEDATA.LDB	$(AppPath)	4/23/1997	64	
MOVEDATA.MDB	$(AppPath)	4/23/1997	229376	
PASSWORD.BMP	$(AppPath)	12/23/1996	185398	
SECURITY.LDB	$(AppPath)	4/23/1997	64	
SECURITY.MDB	$(AppPath)	4/23/1997	65536	
SYSTEM.LDB	$(AppPath)	12/23/1996	64	
SYSTEM.MDA	$(AppPath)	12/23/1996	98304	
CAST.INI	$(AppPath)	4/23/1997	962	

Legend:

$(WinPath)	Path name to Windows directory
$(WinSysPath)	Path name to Windows system files directory
$(AppPath)	Path name to CAST 5 application program directory

Program and Source code files. The program file WINCAST.EXE contains the executable CAST 5 program. It was compiled by the Microsoft Visual Basic Version 4 system as a 16-bit application program. The source code for this program is contained in the files listed in Table 3; these files are not distributed with the SETUP program.

Table 3. A Directory Listing of the Source Code Files Used to Compile CAST 5 Version 1.15.

```
  File Name              Size     Date      Time  Extended File Name

ABOUT    FRM            3,558  03-04-97  7:59p ABOUT.FRM
CAST     BAS           43,560  10-23-96 10:07p CAST.BAS
CONSTANT TXT           38,244  04-28-93 12:00a CONSTANT.TXT
CONTROL  BAS           12,362  04-21-97  2:22p CONTROL.BAS
DIALOG   FRM            7,817  04-18-97  8:46a DIALOG.FRM
EXAMUTIL FRM           14,835  04-23-97  3:40p EXAMUTIL.FRM
FEEDBACK FRM           10,265  04-23-97  3:40p FEEDBACK.FRM
FILESELE FRM            4,618  04-17-97 10:53p FILESELE.FRM
FORM1    FRM              486  10-30-96 12:18a FORM1.FRM
HELP     FRM            1,787  04-23-97 10:17a HELP.FRM
HELP     FRX                8  04-23-97 10:17a HELP.FRX
ITEMWIND FRM           51,313  04-23-97 11:13a ITEMWIND.FRM
ITEMWIND FRX        1,233,160  02-27-97 10:57a ITEMWIND.FRX
PWORD    FRM           13,133  04-01-97 11:14p PWORD.FRM
SAMPLES  FRM            5,256  04-01-97 11:59p SAMPLES.FRM
SECURITY FRM           34,618  04-23-97  3:40p SECURITY.FRM
SECURITY FRX               92  04-23-97  3:40p SECURITY.FRX
VIEWEXAM FRM            1,473  04-23-97  3:40p VIEWEXAM.FRM
VIEWEXAM FRX                6  04-23-97  3:40p VIEWEXAM.FRX
WINCAST  MAK              666  04-23-97  3:40p WINCAST.MAK
WINCAST  VBZ            3,769  04-24-97  9:55a WINCAST.VBZ
```

Database files. There are three databases used in the CAST 5 (WinCast) system. These databases are named:

CAST
EXAMINEE
SECURITY

Each of these databases contains two component files. One file is designated with the file extension "MDB." The second part is designated with the file extension "LDB."
For example, the following file names will be found in the CAST system directory:

CAST.MDB
CAST.LDB
EXAMINEE.MDB
EXAMINEE.LDB
SECURITY.MDB
SECURITY.LDB

In addition to the database filenames listed above, two additional databases will also be found in the WinCast subdirectory. These are:

MOVEDATA
SYSTEM

MOVEDATA files (MOVEDATA.LDB and MOVEDATA.MDB) contain a duplicate of the blank test results database. These files are provided as a means to copy or transfer test results. Instructions for these functions are included in the CAST 5 Users' Guide at Appendix A.

CAST 5 also includes two Microsoft Jet Database system files, SYSTEM.LDB and SYSTEM.MDA; these files are used for Microsoft system functions, and were not created as part of the WinCast development system.

Each of the database files listed above is encrypted using Microsoft's encryption feature provided with the 'Data Manager' utility in Visual Basic 4.0. (The encrypted files are readable only by the Microsoft ACCESS database software; that software's file encryption/decryption feature can be used to decrypt and edit CAST 5 database files.) The CAST, EXAMINEE and SECURITY databases are described below.

Database Descriptions

The CAST Database

The CAST database is designed to contain the following:

Introduction screen text
Help screen text
Miscellaneous screen text
WK sample items and feedback
WK operational items
WK experimental items
WK information tables
WK item parameters
AR sample items and feedback
AR operational items
AR experimental items
AR information tables
AR item parameters

This file is "read-only" since the data contained within this file are used for display and calculation purposes only. This file is not modified during a test administration.

CAST fields. There are only two fields within the CAST database as follows:

(1) Field 1 - Primary: The 'Primary' field holds the record identifier. In this CAST database, all records are identified with a number between 1 and 9999. In order to locate a particular record, the 'Primary' field is used as the 'Key' for the CAST database.

(2) Field 2 - TextInfo: This field contains either text or binary information. Records containing screen text are always saved as standard 'flat' ASCII. Records containing values such as adaptive test item selection (information) tables or item parameters are stored as binary. The specific formats for information tables and parameter records are defined below.

<u>CAST database keys</u>. No indexes are used by the WinCast system to access the CAST database file. The 'Key' for the CAST database file is the field named 'Primary.' This 'Primary' field always contains a record number; the WinCast system uses these numbers to fetch a particular record from the CAST database file.

<u>Information contained in the CAST database</u>. Records with key numbers 1 through 8999 contain text data, including the text of instructions, sample (practice) questions, help screens, and banks of operational and experimental WK and AR test items. The CAST program accesses these by key numbers; contents are as follows:

Records 1 - 18	Instructions and Miscellaneous Screens
Record 101	WK Sample Item
Record 102	AR Sample Item
Records 201-207	Help Screens
Records 1001-1257	WK Items 1 through 257
Records 2001-2254	AR Items 1 through 254
Records 3001-3096	WK Experimental Items 1 through 96
Records 4001-4096	AR Experimental Items 1 through 96

Records with key numbers 9000 and greater contain binary data. These data include the item parameters and adaptive item selection tables called "information tables." The item parameters include values of parameters a, b, and c for each WK and AR test question; these are used in test scoring. The information tables contain sorted lists of item numbers; these indicate the optimal items for measurement at each of several equally spaced intervals on the WK and AR ability scales. The specific contents of the binary records are as follows:

Record 9000 - WK Item Parameters
Record 9001 - AR Items Parameters
Record 9002 - WK Information Table
Record 9003 - AR Information Table
Record 9999 - The label 'complete'

Format of the 'Parameters' Records. Each operational test item has a total of three parameters. In the WinCast system these three parameters are named 'A', 'B', and 'C'. In the CAST database file, these three parameters are laid out (in a binary format) as follows:

A parameter for item 1
B parameter for item 1
C parameter for item 1
A parameter for item 2
B parameter for item 2
C parameter for item 2
A parameter for item 3
... and so on.

Each item's three parameters require 13 bytes of storage; these 13 bytes are laid out as follows:

Bytes 1 - 4	Parameter A (the response model's slope parameter)
Bytes 5 - 9	Parameter B (the threshold, or difficulty, parameter)
Bytes 10 - 13	Parameter C (the lower asymptote, or guessing, parameter)

In order to index into this database record and fetch the parameters for a specific item number, the calculation must be performed:

```
Dim Ptr as Integer
Ptr = (13 * (ItemNumber - 1) + 1)
```

Once a pointer is correctly positioned within this record, the first 4 bytes are read sequentially and concatenated together. Then, a VAL function is performed on this string in order to determine the correct floating point value for 'A'. This same process is repeated for both the 'B' and the 'C' parameters with the exception that the 'B' parameter contains 5 bytes instead of 4.

Format of the Information Table Records. Each of the two information table records (WK and AR) has the same format, as follows:

20 rows
35 columns

Since it is possible to administer an item number larger than 256, the WinCast system uses a two byte scheme for each item number within the information table. The item number is determined as follows:

```
Assign a variable with 0;
add the value 256 to the variable when the second byte is larger than 0;
decrement this second byte and loop until the second byte becomes 0';
add the first byte to the variable.
```

The total number of entries in each information table is therefore: (rows * columns * 2).

CAST Maintenance Utility. Within the CAST development system there is a subdirectory within WinCast named 'Utility.' Inside this 'Utility' subdirectory exists a Visual Basic executable program named 'Project1.' This 'Project1' utility file can be used to add, delete, and edit the records and record keys of the CAST database file. Thus, this utility program can be used to add items or instructional text to the CAST 5 item banks, edit the text of existing instructions and question text, and delete selected text. It should be used only with great caution, however, because it is imperative that the key numbers of test questions, their item parameter values, and the item selection tables be coordinated. Failure to coordinate these properly could result in corruption of the adaptive test item selection and test scoring processes.

The EXAMINEE Database

The EXAMINEE database is designed to contain examinee identification information as well as all significant test performance information. The fields within this EXAMINEE database file are defined as follows:

Last name
First name
SSN (examinee)
Recruiter ID and password
Test information
Complete flag

Most of these fields are self explanatory with the exception of the 'Test Information' field and the 'Complete Flag' field. The field named 'Complete Flag' is set to false until the test administration for this record is completed. Upon the completion of this test session, this 'Complete flag' variable is set to TRUE. The Test Information field contains detailed test performance information including:

I. Test instructions start time
II. Test interruption time
III. Test instructions completion time
IV. Subtest label (Word Knowledfge or Arithmetic Reasoning)
V. Subtest start time
VII. Item-by-item data, including:
VIII. Item ID number
IX. Item type (N = normal; E = experimental)
X. Item key (1 through 5)
XI. Item response (1 through 5)
XII. Item score (Y = right; N = wrong)
XIII. Updated ability estimate
XIV. Updated error variance
XV. Item response time in seconds
XVI. Test results (basis for score report, including:
XVII. Predicted AFQT percentile score
XVIII. Predicted Word Knowledge standard score

XIX.	Predicted Arithmetic Reasoning standard score
XX.	AFQT range probability estimates
XXI.	50-99 (category 1 - 3a)
XXII.	31-49 (category 3b - 4a)
XXIII.	1-30 (category 4b - 5)

EXAMINEE database keys. There are no file keys defined in the EXAMINEE database. This is because a record is identified as one of the following:

-- New record for a new test administration
-- An active record that should be used to resume a previously started test.

The correct active record identified as one to be resumed is determined as follows:

The 'Complete flag' is set to false
The test was started on the same day
A match is found on the Recruiter password
A match is found on the examinee SSN

Since it is possible to have multiple records containing the same Recruiter password and examinee SSN, a simple key field (or concatenated fields used as a key) is not useful.

EXAMINEE database indexes. The EXAMINEE database uses two indexes in order to quickly search for specific records. These indexes are defined as follows:

Recruiter password
Examinee SSN

These two indexes help locate specific records when the system attempts to identify a resumed test.

The SECURITY Database

The SECURITY database is designed to contain recruiter passwords as well as an access level for each recruiter. In order to operate the WinCast system, the user must enter a recognized password. The password supplied by the user must be a 9-digit number that has been previously entered into the SECURITY database. Each recognized password has an associated level of access that was assigned when the user's passowrd was initially registered.. This access level ranges from a value of 1 to 4. The values are intended to grant access to certain sensitive or potentially compromising CAST 5 software functions.

The fields defined within the SECURITY database are as follows:

I.	Recruiter password
II.	Recruiter name
III.	Access level

The RECRUITER PASSWORD field. The RECRUITER PASSWORD field is used to match the password entered by the user in order to determine if the user has a valid clearance to use the CAST system.

The name field. The name is only used for display purposes when modifying the SECURITY database. The user can see the recruiter's name in order to insure the proper maintenance functions are being performed on the correct recruiter password. The name is also recorded in the examinee record of tests administered by specific users.

The access level field. The Access level field is used to store a value from 1 to 4. The meaning of these four values are as follows:

Access level 1	Can administer tests and generate score reports only
Access level 2	Can administer level 1 user passwords
Access level 3	Can administer level 2 user passwords, and use CAST 5 system maintenance utility functions
Access level 4	System manager: no restrictions

SECURITY database keys. There are no keys within the SECURITY database.

SECURITY database indexes. The SECURITY database uses the recruiter password field as its index. This is how the system can find a specific recruiter password within the SECURITY database.

SECURITY database maintenance. The WinCast system contains a utility that allows a user to add, update, and delete a recruiter's password information. This utility program allows the user to perform functions for other users who have an equal or lower Access level (with the exception of the Access level 4 user who can perform any function).

Bitmap Image Files

CAST 5 uses four bitmap image files as the source for graphics displays at various points in CAST test administration. Those files are listed here.

File Name	Displays:
CASTLOGN.BMP	The screen displayed at the start of the program.
ENDTEST.BMP	The screen displayed at test completion.
FEEDBACK.BMP	The score report screen.
PASSWORD.BMP	The screen displayed to elicit password entry.

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Appendix A: CAST 5 for Windows User's Guide

Cast 5 for Windows

Users' Guide

Chapter 1

Introduction to CAST 5

What is CAST?

CAST is a computer software system designed to help recruiters make the best use of their own time and that of their recruiting prospects. CAST, which stands for "Computerized Adaptive Screening Test," is a short, computer-administered test that recruiters can use to forecast a prospect's likely performance on portions of the ASVAB.

Benefits of using CAST 5

CAST will predict a prospect's AFQT score as well as their scores on the Word Knowledge and Arithmetic Reasoning tests of the ASVAB. Recruiters can use these score forecasts to screen prospects, sorting those most likely to do well on the ASVAB from those who are not likely to qualify for enlistment or for specific enlistment programs.

Using computerized adaptive testing theory and technology, CAST does this very efficiently compared to alternative tests such as the Enlistment Screening Test (EST) or Computerized Enlistment Screening Test (CEST). A typical CAST session lasts less than 20 minutes -- far shorter than other screening tests. Despite its brevity, CAST is every bit as accurate as other tests for predicting AFQT scores. In fact, research has shown that CAST is as accurate as the AFQT itself.

Characteristics of CAST 5

CAST administers two short tests -- Word Knowledge and Arithmetic Reasoning. Both of these tests are very similar to the ASVAB tests of the same names. Both tests are adaptive, which means the computer selects test questions one at a time on the basis of the prospect's performance. Different people get different tests; adaptive selection of test questions ensures that time is not wasted with questions that are far too difficult or easy for the individual prospect's ability level.

The CAST 5 Word Knowledge test administers 15 questions; this test typically takes less than 5 minutes. CAST 5's Arithmetic Reasoning test administers between 7 and 12 questions, depending on the prospect's performance. It typically takes less than 15 minutes.

What's different about CAST 5?

CAST 5 is an improvement over previous versions of CAST. It is more accurate than previous editions for forecasting AFQT scores. Furthermore, it also provides forecasts of ASVAB Word Knowledge and Arithmetic Reasoning standard scores, something that earlier versions of CAST did not do.

CAST 5 is a Windows application. Its graphical user interface looks more attractive than older versions of CAST, is much easier to use, and includes some features that were not available previously in CAST. Because CAST 5 uses Windows, prospects can use the computer's "mouse" to answer the test questions; alternatively, they can use the standard keyboard if they prefer.

CAST 5's score reports are easier to interpret than those of previous editions. In addition, they are attractively formatted and suitable for inclusion in a prospect's recruiting package.

Chapter 2

Getting Started Using CAST 5

Computer System Requirements

This section lists the computer equipment, software, memory and disk storage space needed to install and use CAST on your computer.

Computer Equipment

CAST 5 for Windows was designed for use on a standalone computer. It requires the following:

- An IBM PC compatible computer with a Pentium or superior processor
- A VGA or superior color video graphics adapter
- A keyboard as well as a mouse, trackball, or compatible pointing device
- A 1.44 MB 3.5-inch floppy disk drive

Operating System Software

CAST 5 requires a Microsoft Windows operating environment. While it was designed for use under Windows NT (version 3.5 or later), it is also compatible with Windows 95.

Memory

CAST 5 requires a minimum of 8 megabytes of random access memory.

Disk Storage Space

The CAST 5 software itself takes up less than 2 megabytes of disk storage space. However, at installation CAST 5 also installs certain required Windows system files if they are not already present on the computer's hard disk drive. In such cases, CAST 5 may require as much as 10 megabytes of disk storage.

Installing CAST for Windows

CAST 5 comes on a set of three 1.44 megabyte, 3.5-inch "Setup" disks. To install CAST 5, simply run the program SETUP.EXE contained on Setup disk number 1. From Windows 95 and Windows NT version 4, the procedure is as follows:

1. Start Windows NT or Windows 95.
2. Insert Setup Disk 1 in floppy disk drive a: or b:.
3. Click the Windows "Start" button, then choose "Run" from the menu that appears.
4. In the "Run" text box, type "a:setup" (or "b:setup"), then click "OK".
5. Follow the instructions on the screen. When a message asks which directory to use for CAST for Windows, enter (or confirm) "C:\WINCAST". On Windows NT systems, you may need to reserve memory; to do so, click the reserve memory option box that appears on the setup screen.

Chapter 3

Using CAST for Windows

Authorized users

Once you have installed CAST 5 to directory C:\WINCAST, it can be used to administer the Computerized Adaptive Screening Test and to perform other CAST system functions. CAST 5 use, however, is limited to authorized users. CAST identifies authorized users by means of passwords; you must have a recognized password in order to use CAST.

At the completion of its installation, CAST 5 recognizes only one password -- that of the system manager. The system manager can use CAST's password maintenance function to create additional authorized passwords. The system manager may assign a single password, and authorize two or more recruiters to use it. Alternatively, the system manager may assign a different password to each authorized user. In any event, to receive a password to use CAST 5, contact your local system manager. The system manager must enter your assigned password on each computer you plan to use to administer CAST.

Note that CAST 5 has several different levels of access. Each authorized password is assigned a specific level of access, from Level 1 to Level 4. Individuals with Level 1 or higher access can administer CAST tests and generate score reports; this is all that most CAST users will require. Individuals with higher levels of access can perform certain maintenance and file utility functions. These functions, and the required access levels, are described in Chapter 5.

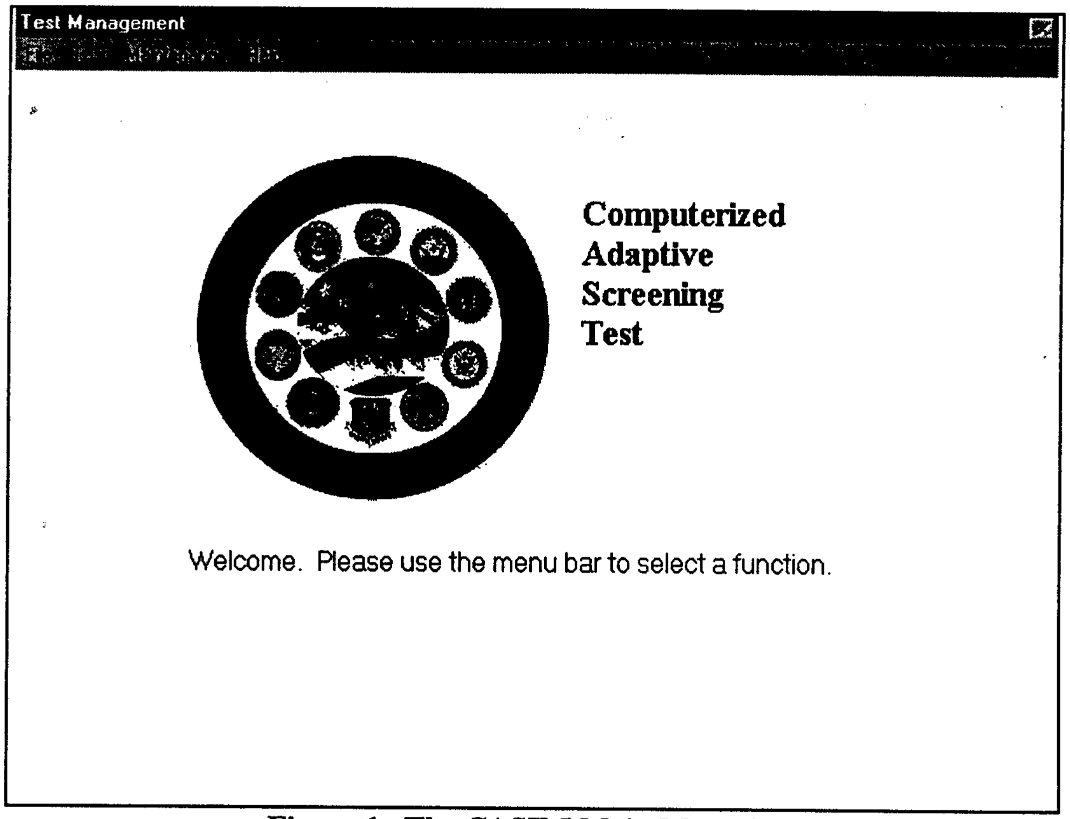
Starting the CAST program

Once you have received an authorized password, and the system manager has entered it into the computer you will use, you are ready to run the CAST 5 program.

To start using CAST 5, double-click the "CAST" button in the Windows 95/NT Programs menu. This will load the CAST 5 program; you will see the CAST menu screen, with the following message near the bottom:

"Type your password. Then press Enter."

Type your authorized password; click "OK" or press "Enter" to complete password entry. When you have entered an authorized password, you will see the main menu screen, which is depicted in Figure 1.



Welcome. Please use the menu bar to select a function.

Figure 1. The CAST 5 Main Menu Screen.

As illustrated in Figure 1, the main menu screen has four submenus, listed in its menu bar. These are as follows:

1. File
2. Test
3. Maintenance
4. Help

The "Test" menu is all you need to give tests and display the results afterward. All four of the menu bar functions are described in Chapters 4 and 5.

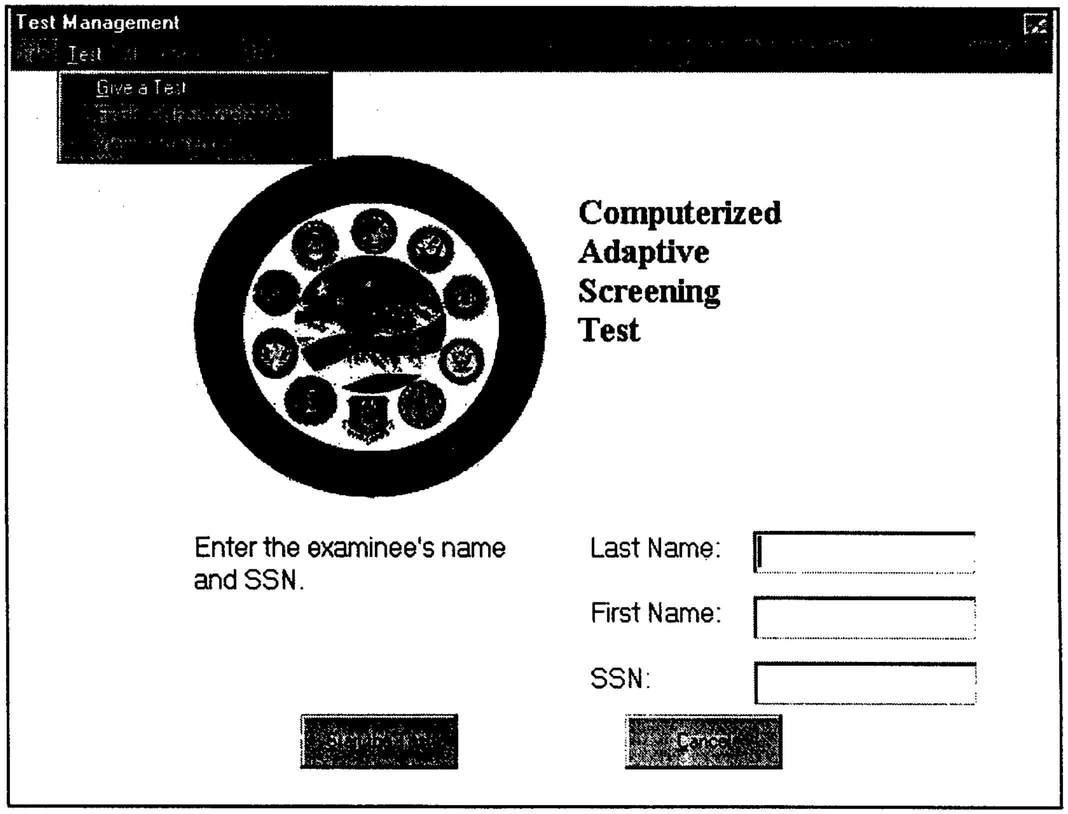
Chapter 4

Administering and Scoring CAST 5

The principal purpose of the CAST 5 software is to administer tests and inform the recruiter of the results. This chapter deals with both of these functions, along with some related features of the software.

Administering a CAST Test

To administer a CAST test, select "Test" from the main menu. Then select "Give a test", the first choice on the drop-down menu shown in Figure 2. You can use either the mouse or the keyboard to make your selection.



Computerized
Adaptive
Screening
Test

Enter the examinee's name and SSN.

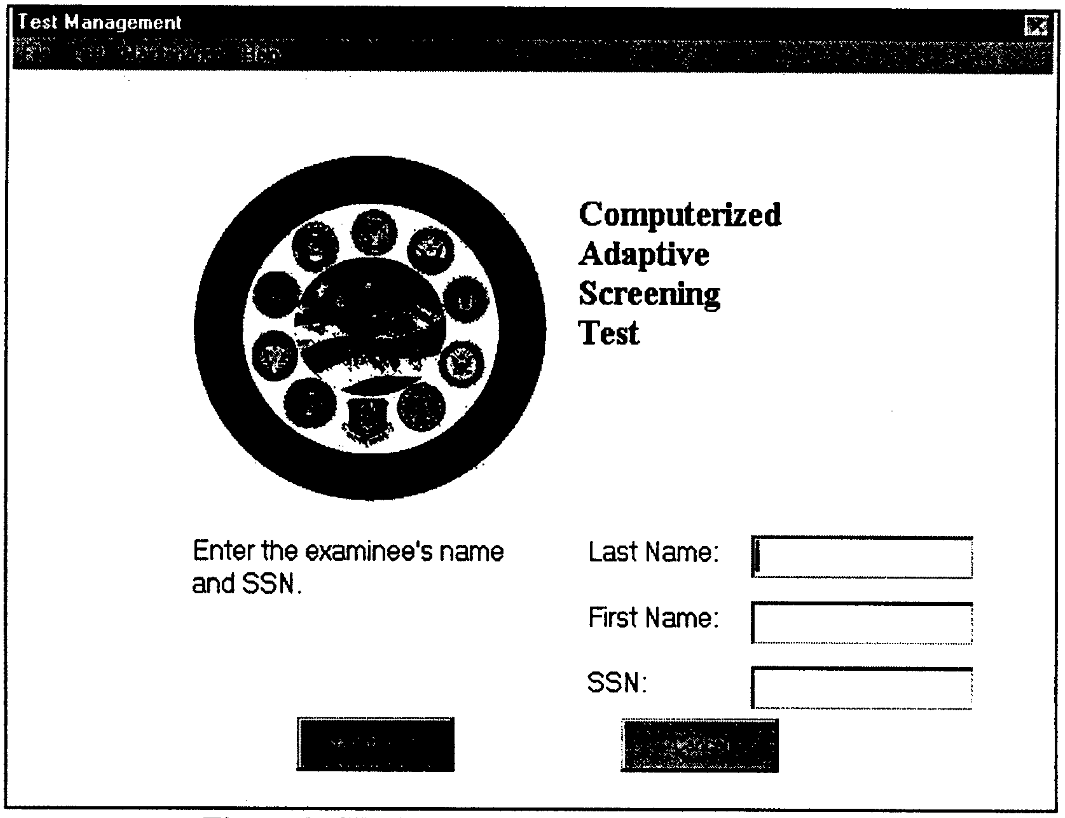
Last Name:

First Name:

SSN:

Figure 2. Menu Selections to Administer a CAST 5 Test.

As soon as you select "Give a test", an examinee identification screen like the one in Figure 3 will appear. Type the examinee's last name, first name, and social security number in the appropriate boxes. When you have finished, press Enter or click "Start the Test" to begin the test. Note that the test will not start until you have completely identified the examinee, including a valid 9-digit social security number.



Computerized Adaptive Screening Test

Enter the examinee's name and SSN.

Last Name:

First Name:

SSN:

Figure 3. The Examinee Identification Entry Screen.

The CAST test will begin with a short set of orientation and general instruction screens. When they have finished, the CAST Word Knowledge test will be given; it will be followed by the Arithmetic Reasoning test. Each of these tests is preceded by an example question; when the examinee has answered the example question correctly, the test will be administered. The Word Knowledge test consists of 15 questions, and usually takes less than 5 minutes. The number of Arithmetic Reasoning test questions varies: It may have as few as 7 questions or as many as 12; it usually takes less than 15 minutes, but may take as much as 25 minutes for some examinees. After the first 7 Arithmetic Reasoning questions, the CAST software may give from 1 to 5 additional questions if needed to increase the accuracy of CAST's AFQT prediction.

All of the CAST test questions are in standard multiple choice format. Each answer choice is labeled "A", "B", "C", "D" or "E". Examinees must select the best of the answer choices presented, and must mark their answer before proceeding to the next question. Examinees may use the computer's mouse or trackball to select their answer choices; alternatively, they may use keys on the keyboard to do the same thing. To use the keyboard, they may press the A, B, C, D or E keys, or they may use the Tab key and the arrow keys to cycle among the answer choices.

There is no way to skip a question in CAST; examinees must answer every question. Once an answer has been marked, examinees must click "Next" or press the Enter key to proceed to the next question. They may change their answer at any time before doing this. However, once "Next" or "Enter" has been pressed, the answer can no longer be changed. CAST does not allow examinees to review previous questions, or to change their answers once a question has been finished.

If the Examinee Needs Help...

There is a "Help" button displayed at the bottom right of the screen during the test. Examinees can press "Help" to view a short summary of the test instructions. When they are finished with this, they can resume taking the test, or request help from the recruiter using a button labeled "Call the recruiter."

If an examinee opts for "Call the recruiter", a short message intended for the recruiter will appear on the screen. At this point, the recruiter has two options: 1) to return to the test, or 2) to stop the test. Choosing "Return to the test" will do just that. Choosing "Stop the test" will cause the test to be discontinued, and return to the CAST menu system; to prevent examinees from access to that system, password entry is required.

Stopping a CAST test does not have to end the examinee's test session. CAST allows an incomplete test to be resumed and finished, as long as it takes place on the same day as the interruption. The test will be resumed at the point of interruption; for example, if it was stopped at the fifth question, it will resume with question 5.

To resume an interrupted test, select "Finish an incomplete test" from the "Test" menu. When an incomplete test is resumed, CAST's general instructions will be repeated, followed by the example question for the interrupted test, and then the test itself. Stopping a test and then resuming it later is a convenient way to let an examinee who is having difficulty review all of the test directions.

If a CAST Test is Unintentionally Interrupted...

Sometimes a computer-administered test may be interrupted by accident. This might happen in the event of an electrical power failure, a battery failure, or an act on the examinee's part. If this occurs, the CAST test can be resumed at the point of the interruption, so that recruiter and examinee time are not wasted.

To resume an interrupted test, select "Finish an Incomplete Test" from the "Test" menu. CAST software will display a list of all that day's examinees who have incomplete tests. Select the examinee of interest, click "OK", and his/her test will resume immediately.

This feature only works for tests interrupted on the same day. A test cannot be resumed after the day it was begun.

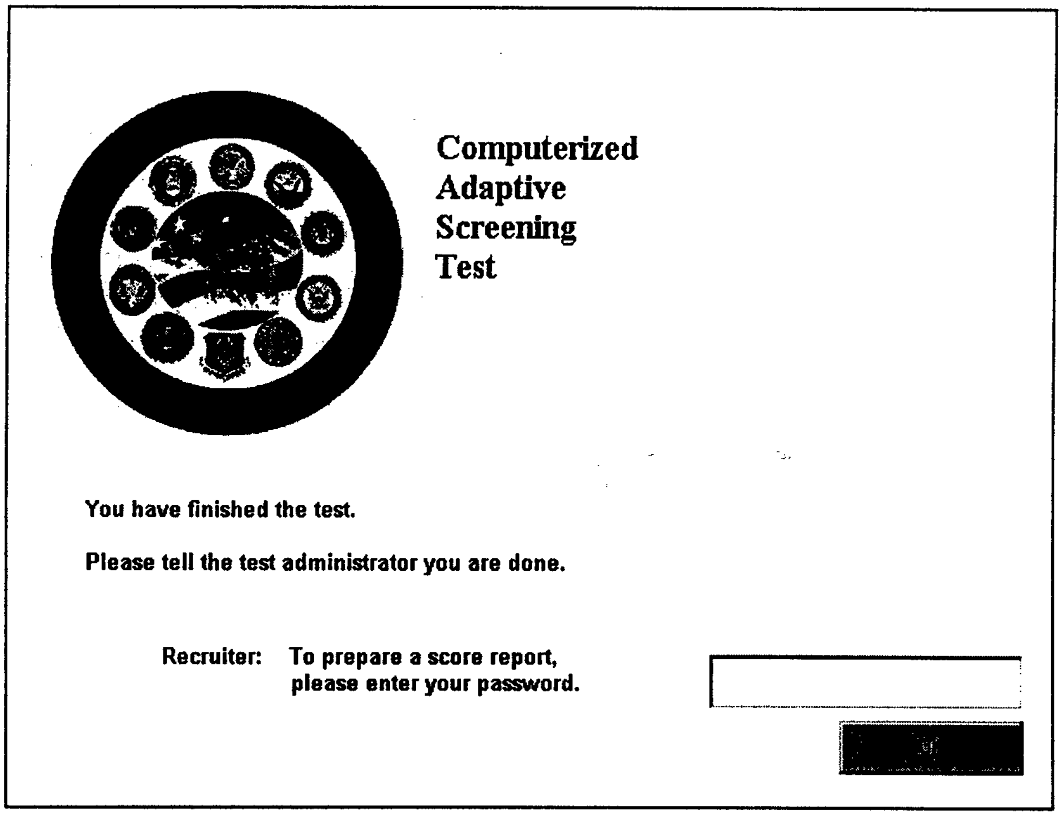
Getting CAST Test Scores

CAST predicts examinees' scores on certain ASVAB tests: The AFQT percentile score, and standard scores for ASVAB's Word Knowledge and Arithmetic Reasoning tests. As soon as an examinee has completed the CAST tests, the screen directs them to tell their recruiter they are done. At this point, the test scores are available to the recruiter. Figure 4 depicts the screen that appears at the end of the test. When this screen appears, the recruiter can display or print out the examinee's score report immediately after entering an authorized password.

Figure 5[1] shows a sample CAST score report. In addition to the imaginary examinee's name and SSN, it lists CAST's prediction of the examinee's AFQT percentile score, and of his or her "Standard Scores" on ASVAB's Word Knowledge and Arithmetic Reasoning tests. In parentheses, the report also indicates how many Word Knowledge and Arithmetic Reasoning questions were given, and how long it took the examinee to complete each part of the test.

CAST saves test results in a data base on each CAST computer. To produce a score report for a previous examinee, select "Print" from the "File" menu. CAST will display a list of all examinees in the data base who finished their CAST tests. Once an examinee has been selected, their scores can be displayed on screen (by using the "Print preview" option) or sent to the printer.

[1] Figures 5 through 7 contain false names and social security numbers.


Computerized Adaptive Screening Test

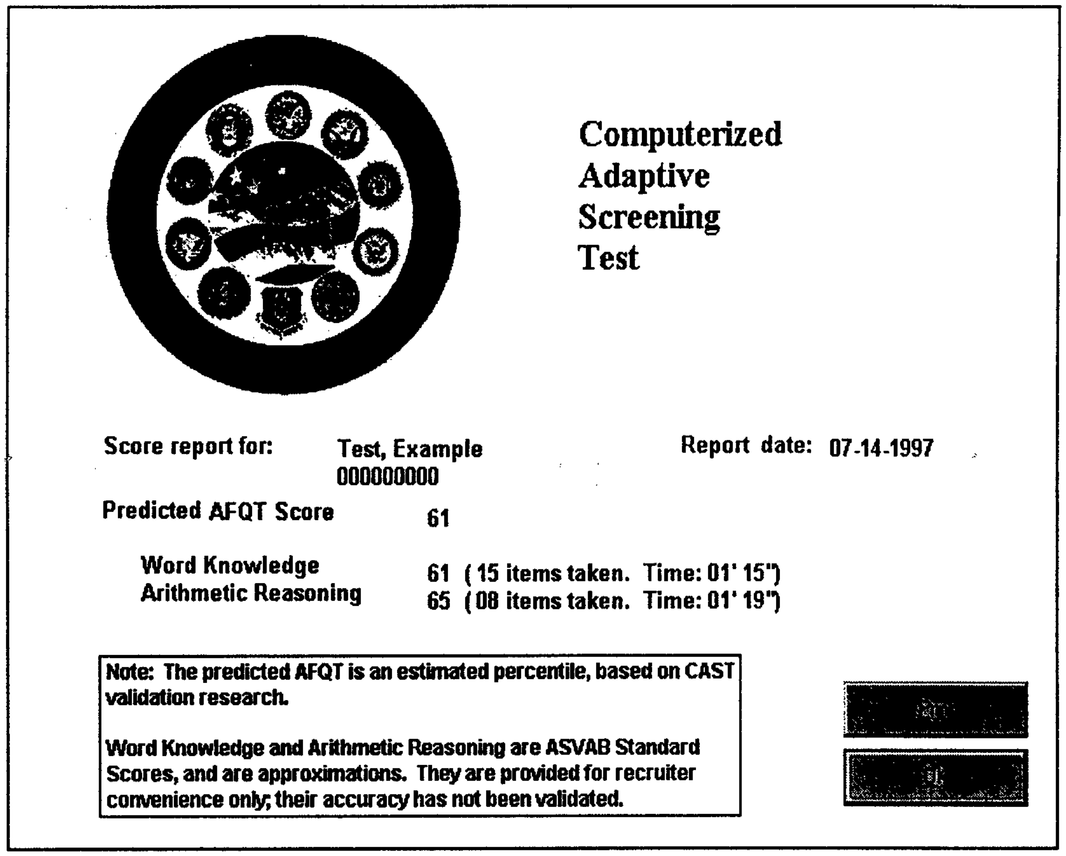
You have finished the test.

Please tell the test administrator you are done.

Recruiter: To prepare a score report, please enter your password.

Figure 4. Enter a Password to Prepare a Score Report.

There is another way to determine CAST results. The "View test scores" option on the "Test" menu lists CAST results in a summary form for everyone in the data base who completed the CAST tests. The list is sorted by last name. It includes examinees' names, test administration dates, and predicted ASVAB scores; to aid in identification, it also includes the last 4 digits of their social security numbers.



Score report for: Test, Example 000000000

Report date: 07-14-1997

Predicted AFQT Score 61

Word Knowledge 61 (15 items taken. Time: 01' 15")
Arithmetic Reasoning 65 (08 items taken. Time: 01' 19")

Note: The predicted AFQT is an estimated percentile, based on CAST validation research.

Word Knowledge and Arithmetic Reasoning are ASVAB Standard Scores, and are approximations. They are provided for recruiter convenience only; their accuracy has not been validated.

Figure 5. An Example CAST 5 Score Report.

To End a CAST Session

To terminate a CAST session, select "Exit" from the "File" menu.

Chapter 5

Maintenance Functions

Selecting "Maintenance Functions" from CAST's main menu displays a drop-down menu with two choices: "Passwords" and "File utilities". Use the "Password" menu to add or delete authorized CAST users, or to change their passwords. Use the "File utilities" menu to view test records in the CAST data base, or to copy, move or delete them. Each of these two functional areas is described more fully in the rest of this chapter. Preceding that is the following discussion of CAST's four levels of access.

Levels of Access

CAST's features and functions are available only to users with recognized passwords. To use CAST to administer tests or display test scores, you must enter any authorized password. To use any other CAST features, you must be authorized Level 2 or higher access. The following table summarizes CAST's four levels of access, and the system functions associated with each one. A check in the box under a specific access level indicates that a given CAST system function is available to users at that level; if the box is not checked, a higher level of access is required.

	Access Level			
CAST System Function	**1**	**2**	**3**	**4**
Administer CAST tests	✓	✓	✓	✓
Display and print individual examinees' scores	✓	✓	✓	✓
View test score lists	✓	✓	✓	✓
Add new authorized users to the CAST system		✓	✓	✓
Change authorized users' passwords		✓	✓	✓
Delete authorized users' passwords		✓	✓	✓
Use the file utilities			✓	✓

Note that while any authorized user can administer CAST tests, Level 2 or higher access is needed to add or delete authorized users, or to change passwords. In addition, Level 3 or higher access is required for use of the file utilities (which are described below).

In addition to the restrictions indicated above, Level 2 and 3 users are limited to administering lower-level password authorizations. That is, a Level 2 user may only add, change, and delete Level 1 users' passwords; Level 3 users may perform the same functions only for Level 1 and Level 2 users. In contrast, a Level 4 user may add, change, and delete passwords of any level, including Level 4, with one exception: The Level 4 System Manager can never be deleted.

Passwords and Password Maintenance

As mentioned above, CAST 5 cannot be used without first entering an authorized password. Installing CAST 5 by means of the SETUP program creates a single user with a Level 4 authorized password: the system manager. For security reasons, the system manager password is not printed in this User Guide; it will be transmitted separately to authorized CAST users at each location.

CAST 5 passwords may be any combination of letters and numbers; there are no restrictions on password length. The designers of CAST 5 intended for the system manager at each location to assign passwords to those with a need to administer CAST tests and perform other functions. In most cases, CAST 5 authorized users should be assigned Level 1 access only, unless there is a specific requirement for higher-level access.

Each time a CAST test is given, CAST 5 records the authorized user's password, and the associated user's name. If CAST system managers want to track CAST usage back to individual recruiters, they should assign each authorized user a unique password.

If individual accountability for CAST use is not required, system managers may prefer a less stringent system. For example, passwords such as "Army", "Navy", "Air Force", "Marines", and "Coast Guard" might be assigned for the purpose of simply accounting for CAST use by Service. Another alternative might be to use passwords to identify the recruiter's unit. Note that the software will not permit the same password to be assigned to more than one user, so a password assigned to an individual recruiter cannot be assigned to another recruiter using the same computer. CAST 5 will not allow more than one user to have the password "Army", for example.

Passwords can only be assigned, changed, or deleted by CAST users with Level 2 or higher access. A Level 1 user cannot create a new user, and cannot change or delete passwords.

CAST users with Level 2 and Level 3 access can perform all password maintenance functions. They are, however, restricted to password maintenance for users with lower-level access; they cannot create or modify passwords of their peers. For example, a Level 2 user can add Level 1 users and administer Level 1 passwords, but cannot add, delete or change Level 2 or Level 3 passwords.

Users authorized Level 4 access are not restricted in this way. A Level 4 user can create additional Level 4 users, and can change or delete Level 4 users' passwords. The only exception to this is the system manager password: It may be changed, but not deleted.

The File Utilities

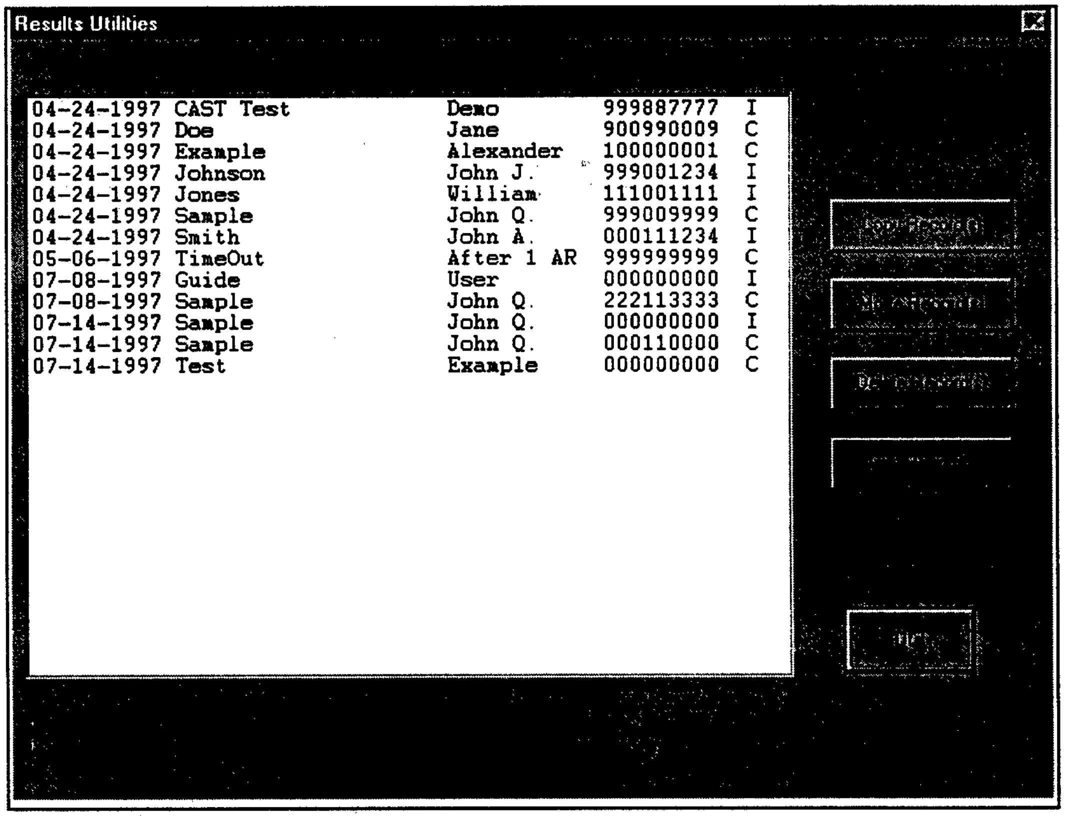
CAST 5 includes several file utility functions. These have been designed primarily to support transmittal of CAST test records from each local computer to a central database; they may also be useful for local "housekeeping" purposes.

Each time a CAST test is given, a record of it is stored in a database file on the local computer. These records are intended for administrative and research use. For those purposes, it may be necessary to transmit the data to a centralized CAST data base in another location; the file utilities provide a means of doing this. Over time, CAST test records on a local computer can accumulate, taking up needed space on the local computer's hard disk drive; the file utilities provide a means of deleting these records. The file utilities also provide a means to inspect individual CAST test records at a fine level of detail; this may be useful for administrative, software maintenance, or research purposes.

Inspecting CAST test records, transmitting them to a central facility and deleting records are functions that must be performed with care and judgment. To reduce the opportunity for error or misuse, it is prudent to limit these functions to a small number of users. For this reason, the file utilities functions are reserved for users with the highest levels of access: Level 3 and Level 4. Users with Level 1 or 2 access cannot perform them.

Authorized users may access the file utilities by selecting the "File utilities" option under "Maintenance" on the main menu bar. When this is done, a screen like the one in Figure 6 will appear. It contains a list of all test records in the database; the test records are sorted by date, with the oldest records listed first. It also displays command buttons for four functions: "Copy records", "Move records", "Delete records", and "View records".

Each of these functions is described in its own section below. Before using any of these functions, the user must first highlight the test records that are to be operated on. The descriptions of these operations begins with the "View records" function, and then proceeds to the other three functions.

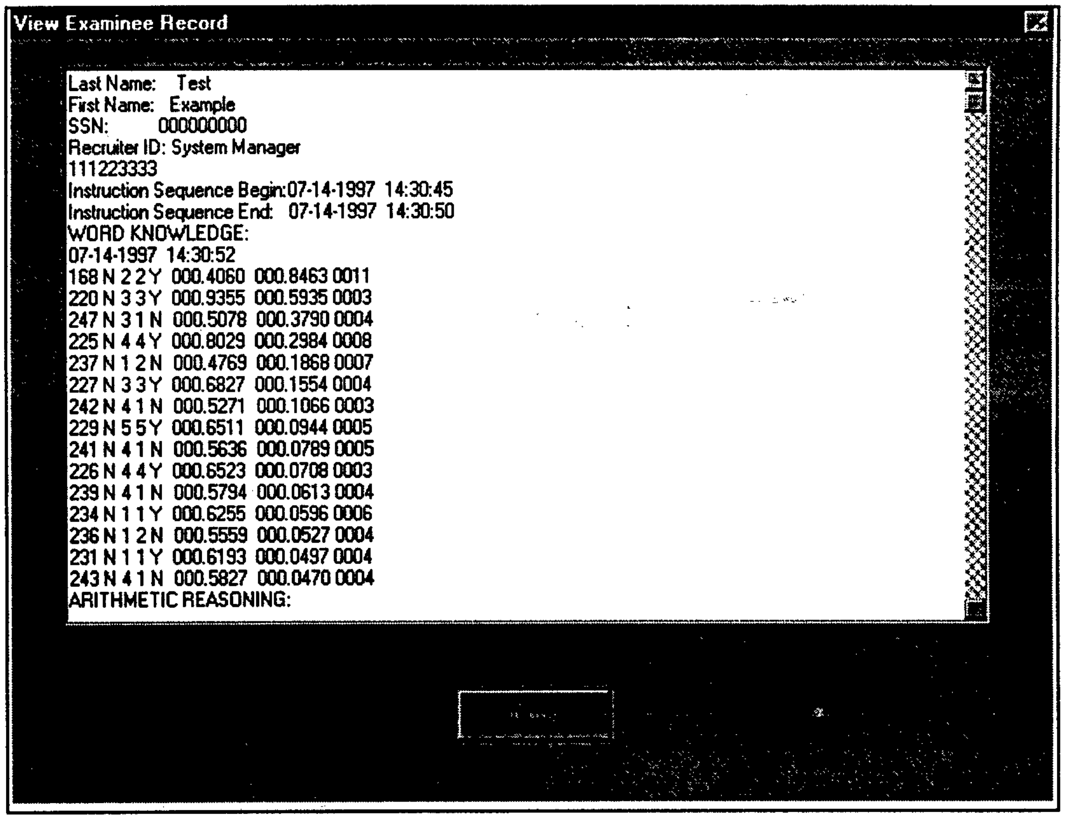


```
04-24-1997 CAST Test          Demo         999887777  I
04-24-1997 Doe                Jane         900990009  C
04-24-1997 Example            Alexander    100000001  C
04-24-1997 Johnson            John J.      999001234  I
04-24-1997 Jones              William      111001111  I
04-24-1997 Sample             John Q.      999009999  C
04-24-1997 Smith              John A.      000111234  I
05-06-1997 TimeOut            After 1 AR   999999999  C
07-08-1997 Guide              User         000000000  I
07-08-1997 Sample             John Q.      222113333  C
07-14-1997 Sample             John Q.      000000000  I
07-14-1997 Sample             John Q.      000110000  C
07-14-1997 Test               Example      000000000  C
```

Figure 6. An Example of the File Utilities Control Screen.

View Records

"View records" allows authorized users to inspect the detailed records of each CAST test, an example of which is depicted in Figure 7. The CAST test record includes the examinee's name and social security number, the name and password used by the recruiter to initiate the test, the test date, and detailed records of the examinee's progress through the test directions and each Word Knowledge and Arithmetic Reasoning test question. There is a CAST test record for every test that was started, regardless of whether it was finished; for finished tests, the last entry in the record is a list of predicted ASVAB performance data, including the forecasts of ASVAB AFQT, Word Knowledge, and Arithmetic Reasoning scores. "View records" may be useful for checking the accuracy of CAST's internal computations or ASVAB score predictions; it may also be useful for tracking CAST usage by Services or by individual recruiters.



```
Last Name:   Test
First Name:  Example
SSN:         000000000
Recruiter ID: System Manager
111223333
Instruction Sequence Begin:07-14-1997  14:30:45
Instruction Sequence End:  07-14-1997  14:30:50
WORD KNOWLEDGE:
07-14-1997  14:30:52
168 N 2 2 Y  000.4060  000.8463 0011
220 N 3 3 Y  000.9355  000.5935 0003
247 N 3 1 N  000.5078  000.3790 0004
225 N 4 4 Y  000.8029  000.2984 0008
237 N 1 2 N  000.4769  000.1868 0007
227 N 3 3 Y  000.6827  000.1554 0004
242 N 4 1 N  000.5271  000.1066 0003
229 N 5 5 Y  000.6511  000.0944 0005
241 N 4 1 N  000.5636  000.0789 0005
226 N 4 4 Y  000.6523  000.0708 0003
239 N 4 1 N  000.5794  000.0613 0004
234 N 1 1 Y  000.6255  000.0596 0006
236 N 1 2 N  000.5559  000.0527 0004
231 N 1 1 Y  000.6193  000.0497 0004
243 N 4 1 N  000.5827  000.0470 0004
ARITHMETIC REASONING:
```

Figure 7. An Example of a CAST 5 Examinee Data base Record.

To use "View records", begin by highlighting the listed records of interest; then click on the "View records" button. The records will be displayed, one at a time, until all highlighted records have been inspected. To view the entire record, the user can use the up and down arrows, or the Page Up and Page Down keys to scroll forward and backward.

The first three lines of each CAST test record contain the examinee's last name, first name, and social security number. The next two lines contain data that identify the authorized user who initiated the test. Following that are the detailed records of the CAST test. These include beginning and ending times of the test instructions and of the tests themselves, and records of each test question. For each test question, the CAST record indicates the question identifier (e.g., 168N), its correct answer, the answer given, the item score ("Y" for right, "N" for wrong), two elements of ability estimation data, and the time in seconds taken to answer the question.

If the CAST test was completed, the very last line in the record contains six elements: The first one is the predicted AFQT percentile[2] score. The second and third are the predicted standard scores on ASVAB's Word Knowledge and Arithmetic Reasoning tests, respectively; these score predictions use the ASVAB standard score[3] scale. The fourth, fifth and sixth elements are the computed probabilities that the examinee's AFQT score will fall into AFQT categories 1 through 3a (AFQT 50 - 99), 3b (AFQT 31 - 49), and 4 through 5 (AFQT 1 - 30).

Copy Records

The "Copy records" button causes highlighted examinees' records to be copied from the CAST 5 test records database to another database file (called the "target file" below.) The target file must be a database file with the same format as CAST's test records database file. It is intended to be used to facilitate transmitting CAST test records from the local computer to a central CAST database: Copy the records to the target file, which can then be transmitted elsewhere by a variety of means, including but not limited to modem transfers, e-mail, and even floppy disks sent by surface mail.

To copy CAST test records, the user must highlight the records to be copied, then click the "Copy records" button. A screen message will ask the user to specify the name of the target file -- the one that is to receive the data. Note that the target file must be a data base file in the same format as CAST's test records data base file. CAST provides an empty formatted file upon installation. That file's name is "copydata.mdb"; users should make a copy of that file, with a different file name, for use with the "Copy records" function[4].

Move Records

The "Move records" function performs the same function as "Copy records". However, once the selected records have been copied, using the "Move" function, they are deleted from the CAST examinee record file.

[2] ASVAB AFQT scores are reported as "percentiles": the proportion of equal or lower scores in a reference group, the 1980 Profile of American Youth population.

[3] The ASVAB standard score scale is used to record scores on the 10 ASVAB tests. 50 is average; the scale has a standard deviation of 10. Scores below 30 and above 70 are rare.

[4] This point is important: Do not move or copy examinee records to the "MOVEDATA.MDB" file. First, make a copy of "MOVEDATA.MDB" with a different filename prefix (retain the ".MDB" suffix.) Always use a file copy to move or copy examinee records. This is necessary because there is no provision to delete data copied or moved to the target file.

The "Move records" function is intended to facilitate transferring selected examinee records from local computers to a central CAST database. For example, a group of records can be "moved" from the examinee file to a target file; then the target file could be uploaded to the central database, by mail, modem, or Internet server.

As mentioned above under "Copy records", the target file must be a data base file in the same format as CAST's test records data base file. CAST provides an empty formatted file named "COPYDATA.MDB"; users should make a copy of that file, with a different file name, for use with the "Copy records" or "Move records" functions.

Since "Move records" deletes the designated records from the CAST examinee file, it can simplify file housekeeping.

Delete Records

"Delete records" permanently deletes selected examinees' records from the CAST computer's examinee data file. This function may be useful for trimming the examinee file of unwanted data. However, deletion destroys the affected data, and should be used with great caution. If CAST examinee records are to be aggregated at a central database, "Move records" or "Copy records" should be used, rather than "Delete records."

Appendix B: CAST 5 Source Code

Appendix B

CAST 5 Source Code

Table of Contents

CONTROL.BAS

```
Attribute VB_Name = "ControlMod"
Option Explicit

'All significant system variables are defined below

' (32 bit code) Declare Function SystemParametersInfo Lib "user32" Alias
"SystemParametersInfoA" (ByVal uAction As Long, ByVal uParam As Long, ByVal
lpvParam As Any, ByVal fuWinIni As Long) As Long
Declare Function SystemParametersInfo Lib "user" (ByVal uAction As Integer,
ByVal uParam As Integer, lpvParam As Any, ByVal fuWinIni As Integer) As
Integer
Public Const SPIF_SENDWININICHANGE = &H2
Public Const SPI_SETDESKWALLPAPER = 20
Public Const SPI_SETSCREENSAVEACTIVE = 17

Global Abort As Integer
Global InfoRows As Integer
Global InfoColumns As Integer
Global First As String
Global Last As String
Global SSN As String
Global Version As String
Global VersionDate As String

Global Const MaxItems = 300
Global Const MaxExpItems = 50
Global Const MaxDistractors = 5
Global Const MaxSubtests = 2
Global Const MaxIncorrect = 3
Global Const ParameterFileName = "C:\WINCAST\CAST.INI"
Global Const SecurityFileName = "C:\WINCAST\SECURITY.MDB"
Global Const Offset = 8
Global Const INTRO = 0
Global Const WK = 1
Global Const AR = 2
Global Const FINAL = 3
Global Const InverseOn = 162
Global Const InverseOff = 163
Global Const DefaultName = "System Manager"
Global Const HELPSCREEN = 1
Global Const QUIT = 2
Global Const ASK_ADMINISTRATOR = 3
Global Const ALLOW_BACKUP = 4

Global CRLF As String * 2

Global InitPVAR(MaxSubtests) As Double
Global InitTheta(MaxSubtests) As Double
Global ExtraItems(MaxSubtests) As Integer
Global ExtraValue(1 To 3) As Double
Global Info As String * 1400   'Room for Info Table
Global RNDItems(MaxDistractors) As Integer
Global Used(MaxItems) As Integer
Global ExpUsed(MaxItems) As Integer

Global DebugFlag As Integer
Global AllItemDebug As Integer
Global EnableShowStats As Integer
Global MaxWKItems As Integer
Global MaxARItems As Integer
Global WKLength As Integer
Global ARLength As Integer
Global ProbParams(1 To 6) As Double

Global RegCoefWK As Double
Global RegCoefAR As Double
Global RegConst As Double
Global WriteDisk As Integer

'Global TempFile As String
'Global OutputFile As String
'Global ReportProgram As String
'Global InputWork As String
'Global OutputWork As String

Global MaxWKExp As Integer
Global MaxARExp As Integer
Global WKExpAdmin As Integer
Global ARExpAdmin As Integer

Global WKExp(1 To MaxExpItems, 1 To MaxSubtests) As Integer
Global ARExp(1 To MaxExpItems, 1 To MaxSubtests) As Integer
Global WKTheta As Double
Global ARTheta As Double
Global WKPvar As Double
Global ARPvar As Double
'
'  New Vars
'
Global DataPath As String
Global IntroImage As String
Global DatabaseName As String
Global ExamineeDBName As String

Global FColor As Integer
Global BColor As Integer
Global DColor As Integer
Global HColor As Integer

Global CastDb As Database
Global CastTable As Table
Global ExamineeDb As Database
Global ExamineeTable As Table

Global SendString As String
Global SendInt As Integer
Global IntroScreenStart As Integer
Global IntroScreenEnd As Integer
Global Banner As String
Global BannerX, BannerY As Integer
Global ItemFontSize As Integer
Global GeneralErrorSwitch As Integer
Global RecruiterName As String
Global RecruiterSSN As String
Global Restart As Integer
Global OutputString As String
Global P1 As Double
Global P2 As Double
Global P3 As Double
Global AFQT As Double
Global AWK As Double
Global AAR As Double
Global WKPerformance As String * 50
Global ARPerformance As String * 50

Global AccessLevel As Integer
Global ARTimeLimit As Integer

Global DriveSave As String
Global DirSave As String

Private Sub ScreenSaveOff_Click()
'Turns the screen saver mechanism off
    Dim R As Integer
    R = SystemParametersInfo(SPI_SETSCREENSAVEACTIVE, 0&, 0&,
SPIF_SENDWININICHANGE)
End Sub

Private Sub ScreenSaveOn_Click()
'Turns the screen saver mechanism back on
    Dim R As Integer
    R = SystemParametersInfo(SPI_SETSCREENSAVEACTIVE, 1&, 0&,
SPIF_SENDWININICHANGE)
End Sub

Private Sub SetWallPaper_Click()
'Defines the background wallpaper
    Dim R As Integer
    R = SystemParametersInfo(SPI_SETDESKWALLPAPER, 0, "d:\\winnt\\ball.bmp",
SPIF_SENDWININICHANGE)
End Sub

Sub GetPerformance(TestInfo As String)
'This checks the examinee's performance for:
'Number of items taken and the number of minutes and seconds that have
'transpired during the test administration
   Dim EndFound As Integer
   Dim Temp As String
   Dim Result As String
   Dim TestNumber As Integer
   Dim Count(1 To 2) As Integer
   Dim TimeCount(1 To 2) As Integer
   Dim X As Integer
   Dim Min As Integer
   Dim Sec As Integer

   Count(1) = 0
   Count(2) = 0
   TimeCount(1) = 0
   TimeCount(2) = 0
   TestNumber = 1
   Temp = TestInfo
   EndFound = False
   While Not EndFound
      EndFound = ParseString(Temp, Result)
      If Mid$(Result, 4, 1) = " " And Mid$(Result, 6, 1) = " " Then
         If Mid$(Result, 5, 1) = "N" Then 'Not experimental
            Count(TestNumber) = Count(TestNumber) + 1
            TimeCount(TestNumber) = TimeCount(TestNumber) + Val(Mid$(Result,
33, 4))
         End If
      ElseIf InStr(1, Result, "ARITHMETIC REASONING:", 1) > 0 Then
         TestNumber = 2
      End If
   Wend

   For X = 1 To 2
      Sec = TimeCount(X)
      Min = 0
      While Sec > 59
         Min = Min + 1
         Sec = Sec - 60
      Wend
      If X = 1 Then
         WKPerformance = " ( " & Format$(Count(1), "00") & " items taken.
Time: " & Format$(Min, "00") & "' " & Format$(Sec, "00") & Chr$(34) & ")"
      Else
         ARPerformance = " ( " & Format$(Count(2), "00") & " items taken.
Time: " & Format$(Min, "00") & "' " & Format$(Sec, "00") & Chr$(34) & ")"
      End If
   Next X
End Sub


Sub QSort(Array() As String, N As Integer)
'This is a generic sort utility that can be used anywhere in the program.
'At this time it is being used to view test scores.
   Dim LSTK(100) As Integer
   Dim RSTK(100) As Integer
   Dim Dummy As String
   Dim X As String
   Dim S As Integer
   Dim L As Integer
   Dim R As Integer
   Dim I As Integer
   Dim J As Integer

   S = 1
   LSTK(1) = 1
   RSTK(1) = N
10100:
   L = LSTK(S)
   R = RSTK(S)
   S = S - 1
10200:
   I = L
   J = R
   X = Array(Int((L + R) / 2))
10300:
   If Array(I) < X Then GoTo 10320
   GoTo 10340
10320:
   I = I + 1
   GoTo 10300
10340:
   If X < Array(J) Then GoTo 10360
   GoTo 10400
10360:
   J = J - 1
   GoTo 10340
10400:
   If I <= J Then GoTo 10420
   GoTo 10500
10420:
   Dummy = Array(I)
   Array(I) = Array(J)
   Array(J) = Dummy
   I = I + 1
   J = J - 1
10500:
   If I <= J Then GoTo 10300
   If I >= R Then GoTo 10650
   S = S + 1
   LSTK(S) = I
   RSTK(S) = R
10650:
   R = J
   If L < R Then GoTo 10200
   If S <> 0 Then GoTo 10100
End Sub

Sub SystemPause(Interval As Long)
'This is a system pause that can be called from anywhere.  This is used
'in some places to slow the system down a little bit in order to insure
'the system does not jump ahead too quickly.
   Dim X As Long

   X = Timer
   While Timer - X < Interval
      DoEvents
   Wend
End Sub
Function ParseString(Temp As String, Result As String) As Integer
'This routine is used throughout the system to parse a string and
'return TRUE if the end of the string has been reached, or FALSE if
'more of the string needs to be parsed.
   Dim X As Integer

   X = InStr(Temp, Chr$(10))
   If X = 0 Then
      Result = Temp
      Temp = ""
      ParseString = True
      Exit Function
   Else
      Result = Left$(Temp, X - 2)
      Temp = Right(Temp, Len(Temp) - X)
      ParseString = False
   End If
End Function



Sub Init()
'This routine initializes all of the significant global system variable
   Dim FileNum, Z As Integer
   Dim Temp$
   Dim WKExpCount As Integer
   Dim ARExpCount As Integer
   Dim AccumExpItems As Integer
   Dim NoOfExp, Position As Integer

   CRLF = Chr$(13) & Chr$(10)
   Abort = False
   GeneralErrorSwitch = False
   Randomize Timer
```

```
AccessLevel = 0
WriteDisk = True

InitPVAR(1) = 1
InitPVAR(2) = 1
InitTheta(1) = 0
InitTheta(2) = 0
InfoRows = 20
InfoColumns = 35

FileNum = FreeFile
Open ParameterFileName For Input As #FileNum
On Local Error GoTo FileReadError
Line Input #FileNum, Temp$
Version = RTrim(LTrim(Temp$))
Line Input #FileNum, Temp$
VersionDate = RTrim(LTrim(Temp$))
Line Input #FileNum, Temp$
DatabaseName = RTrim(LTrim(Temp$))
Line Input #FileNum, Temp$
ExamineeDBName = RTrim(LTrim(Temp$))
Line Input #FileNum, Temp$
DataPath = RTrim(LTrim(Temp$))
Line Input #FileNum, Temp$
IntroImage = RTrim(LTrim(Temp$))
'
Line Input #FileNum, Temp$
FColor = Val(Temp$)
Line Input #FileNum, Temp$
BColor = Val(Temp$)
Line Input #FileNum, Temp$
DColor = Val(Temp$)
Line Input #FileNum, Temp$
HColor = Val(Temp$)
'
Line Input #FileNum, Temp$
IntroScreenStart = Val(Temp$)
Line Input #FileNum, Temp$
IntroScreenEnd = Val(Temp$)
Line Input #FileNum, Temp$
ItemFontSize = Val(Temp$)
Line Input #FileNum, Temp$
ARTimeLimit = Val(Temp$) * 60
'
Input #FileNum, DebugFlag, Temp$
Input #FileNum, AllItemDebug, Temp$
Input #FileNum, EnableShowStats, Temp$
Input #FileNum, MaxWKItems, Temp$
Input #FileNum, MaxARItems, Temp$
Input #FileNum, WKLength, Temp$
Input #FileNum, ARLength, Temp$
If AllItemDebug Then
   WKLength = MaxWKItems
   ARLength = MaxARItems
End If
Input #FileNum, ExtraItems(1), Temp$
Input #FileNum, ExtraValue(1), Temp$
Input #FileNum, ExtraItems(2), Temp$
Input #FileNum, ExtraValue(2), Temp$
Input #FileNum, ExtraValue(3), Temp$
For Z = 1 To 6
   Input #FileNum, ProbParams(Z): Input #FileNum, Temp$
   Next Z

   Input #FileNum, RegCoefWK, Temp$
   Input #FileNum, RegCoefAR, Temp$
   Input #FileNum, RegConst, Temp$
   'Input #FileNum, WriteDisk, Temp$
   'Input #FileNum, TempFile, Temp$
   'Input #FileNum, OutputFile, Temp$
   'Input #FileNum, ReportProgram, Temp$
   'Input #FileNum, InputWork, Temp$
   'Input #FileNum, OutputWork, Temp$
'
   Input #FileNum, MaxWKExp, Temp$
   Input #FileNum, MaxARExp, Temp$
   Input #FileNum, WKExpAdmin, Temp$
   Input #FileNum, ARExpAdmin, Temp$

   WKExpCount = 0
   If WKExpAdmin = 0 Then
      Input #FileNum, Temp$, Temp$
   Else
      AccumExpItems = 0
      While AccumExpItems < WKExpAdmin
         Input #FileNum, NoOfExp, Position
         AccumExpItems = AccumExpItems + NoOfExp
         WKExpCount = WKExpCount + 1
         WKExp(WKExpCount, 1) = NoOfExp
         WKExp(WKExpCount, 2) = Position
      Wend
      Input #FileNum, Temp$
      WKExp(WKExpCount + 1, 1) = 0
      WKExp(WKExpCount + 1, 2) = 0
   End If
   ARExpCount = 0
   If ARExpAdmin = 0 Then
      Input #FileNum, Temp$, Temp$
   Else
      AccumExpItems = 0
      While AccumExpItems < ARExpAdmin
         Input #FileNum, NoOfExp, Position
         AccumExpItems = AccumExpItems + NoOfExp
         ARExpCount = ARExpCount + 1
         ARExp(ARExpCount, 1) = NoOfExp
         ARExp(ARExpCount, 2) = Position
      Wend
      Input #FileNum, Temp$
      ARExp(ARExpCount + 1, 1) = 0
      ARExp(ARExpCount + 1, 2) = 0
   End If
   Close #FileNum
   ItemWindow.Cls
   Set CastDb = OpenDatabase(DatabaseName)
   Set CastTable = CastDb.OpenTable("ScreenText")
   Set ExamineeDb = OpenDatabase(ExamineeDBName)
   Set ExamineeTable = ExamineeDb.OpenTable("Examinee")
   Exit Sub

NoParamsFound:
   MsgBox "Cannot find the parameter file:  " & ParameterFileName
   End

FileReadError:
   MsgBox "Having trouble reading file:  " & ParameterFileName
   CastTable.Close
   ExamineeTable.Close
   End
End Sub

Sub Main()
'This 'Main()' routine controls the flow of the main menu,
'the test administration, and the main menu again.
   Dim R As Integer

   Call ScreenSaveOff_Click
   'R = SystemParametersInfo(17, 0&, 0&, &H2)
   'MsgBox Str$(R)

   If Not DebugFlag Then
      On Error GoTo GeneralError
   End If
   Call Init
   While True
      Security.Show MODAL
      If SendString <> "Quit" Then
         ItemWindow.Show MODAL
      Else
         CastTable.Close
         ExamineeTable.Close
         Call ScreenSaveOn_Click
         End
      End If
   Wend
   End

GeneralError:
   GeneralErrorSwitch = True
   SendInt = 0
   Dialog.Show MODAL
   End
End Sub
```

ABOUT.FRM

```
VERSION 4.00

Begin VB.Form About
   AutoRedraw      =   -1  'True
   Caption         =   "About Cast"
   ClientHeight    =   4380
   ClientLeft      =   2655
   ClientTop       =   1905
   ClientWidth     =   3870
   Height          =   4785
   Left            =   2595
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   ScaleHeight     =   4380
   ScaleWidth      =   3870
   Top             =   1560
   Width           =   3990

Begin VB.Frame Frame2
      Height          =   735
      Left            =   960
      TabIndex        =   2
      Top             =   3600
      Width           =   2175
      Begin VB.CommandButton Command1
         Caption         =   "&Continue"
         Default         =   -1  'True
         Height          =   375
         Left            =   360
         TabIndex        =   3
         Top             =   240
         Width           =   1455
      End
   End

Begin VB.Frame Frame1
      Height          =   3495
      Left            =   240
      TabIndex        =   0
      Top             =   0
      Width           =   3495
      Begin VB.Label Label3
         Alignment       =   2  'Center
         BackColor       =   &H00C0C0C0&
         BeginProperty Font
            name            =   "MS Sans Serif"
            charset         =   1
            weight          =   400
            size            =   12
            underline       =   0   'False
            italic          =   0   'False
            strikethrough   =   0   'False
         EndProperty
         ForeColor       =   &H00C00000&
         Height          =   855
         Left            =   240
         TabIndex        =   5
         Top             =   2280
         Width           =   3015
      End
      Begin VB.Label Label2
         Alignment       =   2  'Center
         BackColor       =   &H00C0C0C0&
         BeginProperty Font
            name            =   "MS Sans Serif"
            charset         =   1
            weight          =   400
            size            =   12
            underline       =   0   'False
            italic          =   0   'False
            strikethrough   =   0   'False
         EndProperty
         ForeColor       =   &H00000040&
         Height          =   855
         Left            =   240
         TabIndex        =   4
         Top             =   1320
         Width           =   3015
      End
      Begin VB.Label Label1
         Alignment       =   2  'Center
         BackColor       =   &H00C0C0C0&
         BeginProperty Font
            name            =   "MS Sans Serif"
            charset         =   1
            weight          =   400
            size            =   12
            underline       =   0   'False
            italic          =   0   'False
            strikethrough   =   0   'False
         EndProperty
         ForeColor       =   &H000000FF&
         Height          =   855
         Left            =   240
         TabIndex        =   1
         Top             =   360
         Width           =   3015
      End
   End
End
Attribute VB_Name = "About"
Attribute VB_Creatable = False
Attribute VB_Exposed = False
Option Explicit

Private Sub Command1_Click()
   SendString = ""
   Unload About
End Sub


Private Sub Form_Load()
   Label1.Caption = "Cast for Windows"
   Label2.Caption = VersionDate
   Label3.Caption = "Version: " & Version
End Sub
```

```
VERSION 4.00
Begin VB.Form Dialog
   AutoRedraw      =   -1  'True
   BackColor       =   &H00C0C0C0&
   BorderStyle     =   0  'None
   ClientHeight    =   4230
   ClientLeft      =   1080
   ClientTop       =   1515
   ClientWidth     =   6720
   ClipControls    =   0   'False
   ControlBox      =   0   'False
   Height          =   4635
   Left            =   1020
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   NegotiateMenus  =   0   'False
   ScaleHeight     =   4230
   ScaleWidth      =   6720
   ShowInTaskbar   =   0   'False
   Top             =   1170
   Width           =   6840
   WindowState     =   2  'Maximized
   Begin VB.CommandButton Command3
      Caption         =   "&Back"
      Height          =   495
      Left            =   2760
      TabIndex        =   6
      Top             =   6000
      Visible         =   0   'False
      Width           =   1575
   End

   Begin VB.CommandButton Command1
      Caption         =   "&Next"
      Height          =   495
      Left            =   4200
      TabIndex        =   5
      Top             =   6000
      Width           =   1575
   End

   Begin VB.CommandButton Command2
      Caption         =   "&Call the Recruiter"
      Height          =   495
      Left            =   5760
      TabIndex        =   2
      Top             =   6000
      Visible         =   0   'False
      Width           =   2055
   End

   Begin VB.Frame Frame1
      Height          =   6975
      Left            =   0
      TabIndex        =   0
      Top             =   0
      Width           =   9615
      Begin VB.PictureBox Picture1
         Height          =   6615
         Left             =   360
         ScaleHeight      =   6555
         ScaleWidth       =   8835
         TabIndex         =   1
         Top              =   120
         Width            =   8895
         Begin VB.Frame Frame2
            Caption         =   "Password required: Type it and press ENTER."
            Height          =   855
            Left            =   4320
            TabIndex        =   3
            Top             =   5520
            Visible         =   0   'False
            Width           =   3615
            Begin VB.TextBox Text1
               Height          =   375
               Left            =   120
               PasswordChar    =   "*"
               TabIndex        =   4
               Text            =   "Text1"
               Top             =   360
               Width           =   3375
            End
         End
      End
   End
End
Attribute VB_Name = "Dialog"
Attribute VB_Creatable = False
Attribute VB_Exposed = False
Option Explicit

Dim Offset As Integer
Dim RecordStart As Integer
Dim RecordEnd As Integer
Dim Ptr As Integer
Dim LMargin As Integer
Dim MyDb As Database
Dim MyTableDef As Table
Dim Processing As Integer


Sub GeneralErrorMessage()
'This is the system's generic error message.
   Dim Message As String
   Dim LMargin As Integer

   Message = "Warning:" & Chr$(10) & Chr$(10)
   Message = Message & Space$(LMargin) & "Test-taker:" & Chr$(10) & Chr$(10)
   Message = Message & Space$(LMargin) & "The computer program has encountered
a problem." & Chr$(10)
   Message = Message & Space$(LMargin) & "Please tell the recruiter you need
assistance." & Chr$(10) & Chr$(10) & Chr$(10) & Chr$(10)
   Message = Message & Space$(LMargin) & "Recruiter:" & Chr$(10) & Chr$(10)
   Message = Message & Space$(LMargin) & "The computer program has detected a
problem." & Chr$(10)
   Message = Message & Space$(LMargin) & "You will not be able to complete the
current test." & Chr$(10)
   Message = Message & Space$(LMargin) & "Try to administer the test again.
If this error recurs," & Chr$(10)
   Message = Message & Space$(LMargin) & "notify your system administrator of
the problem."
```

```
   Dialog.Cls
   Dialog.CurrentX = 4200
   Dialog.CurrentY = 500
   Dialog.Print Message
End Sub

Sub ShowScreen(ScreenNumber As Integer)
'This routine displays a specific record from the CAST database file
'on to the screen.
   If ScreenNumber = -1 Then
      Call GeneralErrorMessage
      Exit Sub
   End If

   CastTable.Index = "Primary"
   CastTable.Seek "=", ScreenNumber
   If Not CastTable.NoMatch Then
      Picture1.Cls
      Picture1.Print CastTable("TextInfo")
   End If

   If Banner <> "" Then
      Picture1.CurrentX = BannerX
      Picture1.CurrentY = BannerY
      Picture1.Print Banner
   End If
End Sub


Function VerifyPassword() As Integer
'This routine checks to make sure that the SSN (password) entered
'is found in the SECURITY database.
   Set MyDb = OpenDatabase(SecurityFileName)
   Set MyTableDef = MyDb.OpenTable("Security")
   MyTableDef.Index = "SSNIndex"
   MyTableDef.Seek "=", LTrim(RTrim(Text1.Text))
   If MyTableDef.NoMatch Then
      VerifyPassword = False
   Else
      VerifyPassword = True
   End If
   MyTableDef.Close
End Function

Private Sub Command1_Click()
   If Processing Then
      Exit Sub
   End If

   Ptr = Ptr + 1
   If Ptr <= RecordEnd Then
      Call ShowScreen(Ptr)
      Command1.Left = 5280
      Command3.Visible = True
      Processing = True
      Call SystemPause(0.5)
      Processing = False
   Else
      SendInt = 0
      Unload Dialog
   End If
End Sub
```

```
Private Sub Command2_Click()
   If Processing Then
      Exit Sub
   End If
   If SendInt = HELPSCREEN Then
      SendInt = ASK_ADMINISTRATOR
      Command2.Caption = "Stop the test"
      Command1.SetFocus
      Call ShowScreen(200)
   ElseIf SendInt = ASK_ADMINISTRATOR Then
   'In order to require a password, please remove comments and last 2 lines
      'Frame2.Visible = True
      'Text1.Text = ""
      'Text1.Visible = True
      'Text1.SetFocus
      'Command2.Visible = False
      SendInt = QUIT
      Unload Dialog
   End If
End Sub

Private Sub Command3_Click()
   If Processing Then
      Exit Sub
   End If

   Ptr = Ptr - 1
   If Ptr < RecordStart Then
      If ALLOW_BACKUP Then
         Unload Dialog
         Exit Sub
      Else
         Ptr = RecordStart
      End If
   End If
   Call ShowScreen(Ptr)
   Processing = True
   Call SystemPause(0.5)
   Processing = False
   If Ptr = RecordStart And SendInt <> ALLOW_BACKUP Then
      Command1.Left = 4200
      Command3.Visible = False
   End If
   Command1.SetFocus
End Sub

Private Sub Form_Activate()
   LMargin = 10
   Processing = False
   If GeneralErrorSwitch Then
      Picture1.FontSize = 12
      Call ShowScreen(-1)
   Else
      Picture1.FontSize = ItemFontSize
      Ptr = RecordStart
      Call ShowScreen(Ptr)
   End If
   Command1.SetFocus
End Sub
```

```
Private Sub Form_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      Call Command1_Click
   End If
End Sub


Private Sub Form_Load()
   Dim X As Integer

   If SendInt = HELPSCREEN Then
      Command1.Caption = "&Return to the Test"
      Command1.Left = 1800
      Command2.Visible = True
   End If
   X = InStr(SendString, ",")
   Offset = Val(Left$(SendString, X - 1)) * 1000
   SendString = Right$(SendString, Len(SendString) - X)
   X = InStr(SendString, ",")
   RecordStart = Val(Left$(SendString, X - 1)) + Offset
   SendString = Right$(SendString, Len(SendString) - X)
   RecordEnd = Val(SendString) + Offset
   If SendInt = ALLOW_BACKUP Then
      Command1.Left = 5280
      Command3.Visible = True
   End If
End Sub


Private Sub Picture1_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      Call Command1_Click
   End If
End Sub


Private Sub Text1_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      If VerifyPassword() Then
         SendInt = QUIT
         Unload Dialog
      Else
         MsgBox "This password is not recognized."
         Text1.Text = ""
      End If
   End If
End Sub
```

EXAMUTIL.FRM

```
VERSION 4.00
Begin VB.Form ExamUtil
   Caption         =   "Results Utilities"
   ClientHeight    =   4230
   ClientLeft      =   1440
   ClientTop       =   1425
   ClientWidth     =   6720
   ClipControls    =   0   'False
   ControlBox      =   0   'False
   Height          =   4635
   Left            =   1380
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   ScaleHeight     =   4230
   ScaleWidth      =   6720
   Top             =   1080
   Width           =   6840
   WindowState     =   2  'Maximized
   Begin VB.CommandButton Command7
      Caption         =   "&View Record(s)"
      Height          =   495
      Left            =   7560
      TabIndex        =   9
      Top             =   3600
      Width           =   1695
   End

   Begin VB.CommandButton Command6
      Cancel          =   -1  'True
      Caption         =   "&Cancel"
      Height          =   495
      Left            =   7440
      TabIndex        =   8
      Top             =   6000
      Visible         =   0   'False
      Width           =   1695
   End

   Begin VB.CommandButton Command5
      Caption         =   "&Delete Record(s)"
      Height          =   495
      Left            =   7560
      TabIndex        =   7
      Top             =   2880
      Width           =   1695
   End

   Begin VB.CommandButton Command4
      Caption         =   "&Move Record(s)"
      Height          =   495
      Left            =   7560
      TabIndex        =   6
      Top             =   2160
      Width           =   1695
   End

   Begin VB.CommandButton Command3
      Caption         =   "&Copy Record(s)"
      Height          =   495
      Left            =   7560
      TabIndex        =   5
      Top             =   1440
      Width           =   1695
   End

   Begin VB.DirListBox Dir1
      Height          =   1605
      Left            =   7320
      TabIndex        =   4
      Top             =   1560
      Width           =   2175
   End

   Begin VB.DriveListBox Drive1
      Height          =   315
      Left            =   7320
      TabIndex        =   3
      Top             =   1200
      Width           =   2175
   End

   Begin VB.FileListBox File1
      Height          =   1815
      Left            =   7440
      Pattern         =   "*.mdb"
      TabIndex        =   2
      Top             =   3240
      Width           =   1815
   End

   Begin VB.ListBox List2
      BeginProperty Font
         name            =   "Courier"
         charset         =   1
         weight          =   400
         size            =   9.75
         underline       =   0   'False
         italic          =   0   'False
         strikethrough   =   0   'False
      EndProperty
      Height          =   5325
      Left            =   120
      MultiSelect     =   2  'Extended
      TabIndex        =   1
      Top             =   480
      Width           =   7095
   End

   Begin VB.CommandButton Command1
      Caption         =   "&Quit"
      Height          =   615
      Left            =   7680
      TabIndex        =   0
      Top             =   5160
      Width           =   1215
   End
End
Attribute VB_Name = "ExamUtil"
Attribute VB_Creatable = False
Attribute VB_Exposed = False
Option Explicit
```

```
Const MaxElement = 500
Dim PArray(MaxElement) As Integer

Dim LastName As String
Dim FirstName As String
Dim RecruiterSSN As String
Dim TestInfo As String
Dim CompleteFlag As Integer
Dim SSN As String
Dim DestFileName As String

Dim DestDb As Database
Dim DestTable As Table

Sub GetRecord(RecordNumber As Integer)
'This routine gets a specific record number (identified by RecordNumber)
'and buffers the fields into system variables.
   Dim X As Integer

   ExamineeTable.Index = "SSNPrimary"
   ExamineeTable.MoveFirst
   For X = 0 To RecordNumber - 2
      ExamineeTable.MoveNext
   Next X
   LastName = ExamineeTable("LastName")
   FirstName = ExamineeTable("FirstName")
   RecruiterSSN = ExamineeTable("RecruiterSSN")
   TestInfo = ExamineeTable("TestInfo")
   CompleteFlag = ExamineeTable("CompleteFlag")
   SSN = ExamineeTable("SSN")
End Sub


Function Pad(Chars As String, Length As Integer) As String
'This routine will verify that a string has exactly the number
'of characters specified by the parameter 'Length'.
   Chars = LTrim(RTrim(Chars))
   If Len(Chars) > Length Then
      Chars = Left$(Chars, Length)
   ElseIf Len(Chars) <> Length Then
      While Len(Chars) < Length
         Chars = Chars & " "
      Wend
   End If
   Pad = Chars
End Function








Sub CopyRecord()
'This routine copies a record from the EXAMINEE database to an
'external database.  Prior to this, the external database must
'have been formatted in the same exact way the EXAMINEE database
'is formatted.
```

```
    Dim Temp As String
    Dim X As Integer
    Dim Count As Integer

     If Not OpenDestFile Then
        Exit Sub
     End If

     Count = 0
     For X = 0 To List2.ListCount - 1
        If List2.Selected(X) Then
           Call GetRecord(PArray(X + 1))
           DestTable.AddNew
           DestTable("LastName") = LastName
           DestTable("FirstName") = FirstName
           DestTable("RecruiterSSN") = RecruiterSSN
           DestTable("TestInfo") = TestInfo
           DestTable("CompleteFlag") = CompleteFlag
           DestTable("SSN") = SSN
           DestTable.Update
           Count = Count + 1
       End If
     Next X
     MsgBox Str$(Count) & " record(s) copied"
     DestTable.Close
End Sub


Sub DeleteRecord()
'This routine removes records from the EXAMINEE database.
   Dim Temp As String
   Dim X As Integer
   Dim Y As Integer
   Dim Count As Integer

   Count = 0
   For X = 0 To List2.ListCount - 1
      If List2.Selected(X) Then
         Call GetRecord(PArray(X + 1))
         ExamineeTable.Delete
         Count = Count + 1
         For Y = 0 To List2.ListCount - 1
            If List2.Selected(Y) Then
               If PArray(Y + 1) > PArray(X + 1) Then
                  PArray(Y + 1) = PArray(Y + 1) - 1
               End If
            End If
         Next Y
      End If
   Next X
   ExamineeTable.Close
   Set ExamineeDb = OpenDatabase(ExamineeDBName)
   Set ExamineeTable = ExamineeDb.OpenTable("Examinee")
   Call ReadFile
   MsgBox Str$(Count) & " record(s) deleted"
End Sub


Sub MoveRecord()
'This routine moves (copies then deletes original) records from the EXAMINEE
database to an
```

```
'external database.  Prior to this, the external database must
'have been formatted in the same exact way the EXAMINEE database
'is formatted.
   Dim Temp As String
   Dim X As Integer
   Dim Y As Integer
   Dim Count As Integer

    If Not OpenDestFile Then
       Exit Sub
    End If

    Count = 0
    'ExamineeTable.Index = "SSNPrimary"
    'ExamineeTable.MoveFirst
    For X = 0 To List2.ListCount - 1
       If List2.Selected(X) Then
          Call GetRecord(PArray(X + 1))
          'LastName = ExamineeTable("LastName")
          'FirstName = ExamineeTable("FirstName")
          'RecruiterSSN = ExamineeTable("RecruiterSSN")
          'TestInfo = ExamineeTable("TestInfo")
          'CompleteFlag = ExamineeTable("CompleteFlag")
          'SSN = ExamineeTable("SSN")

          DestTable.AddNew
          DestTable("LastName") = LastName
          DestTable("FirstName") = FirstName
          DestTable("RecruiterSSN") = RecruiterSSN
          DestTable("TestInfo") = TestInfo
          DestTable("CompleteFlag") = CompleteFlag
          DestTable("SSN") = SSN
          DestTable.Update
          ExamineeTable.Delete
          Count = Count + 1
          For Y = 0 To List2.ListCount - 1
            If List2.Selected(Y) Then
               If PArray(Y + 1) > PArray(X + 1) Then
                  PArray(Y + 1) = PArray(Y + 1) - 1
               End If
            End If
          Next Y
      End If
      'ExamineeTable.MoveNext
    Next X
    MsgBox Str$(Count) & " record(s) moved"
    DestTable.Close
    ExamineeTable.Close
    Set ExamineeDb = OpenDatabase(ExamineeDBName)
    Set ExamineeTable = ExamineeDb.OpenTable("Examinee")
    Call ReadFile
End Sub

Function OpenDestFile() As Integer
'This routine simply opens an external file formatted in the same
'way the EXAMINEE database is formatted.
   On Local Error GoTo BadDb

   Set DestDb = OpenDatabase(DestFileName)
   Set DestTable = DestDb.OpenTable("Examinee")
   OpenDestFile = True
   Exit Function
```

```
BadDb:
   MsgBox "Target file is not a valid examinee formatted file."
   OpenDestFile = False
End Function

Sub ReadFile()
'The EXAMINEE database is read and the records are placed into the
'List Box.
   Dim Token As String * 1
   Dim Temp As String
   Dim Status As String
   Dim Array(MaxElement) As String
   Dim Point As Integer
   Dim Y As Integer
   Dim X As Integer
   Dim TestInfo As String
   Dim TestDate As String
   Dim Sequence As Integer

   Token = Chr$(0)
   List2.Clear
   Point = 0
   Sequence = 0
   On Local Error GoTo FileEmpty

    ExamineeTable.Index = "SSNPrimary"
    ExamineeTable.MoveFirst
    While Not ExamineeTable.EOF
       TestInfo = ExamineeTable("TestInfo")
       X = InStr(1, TestInfo, "Instruction Sequence Begin:", 1)
       If X = 0 Then
          TestDate = ""
       Else
          TestDate = Mid$(TestInfo, X + 27, 10)
       End If
       If ExamineeTable("CompleteFlag") = True Then
          Status = "C"
       Else
          Status = "I"
       End If
       Temp = TestDate & " " & Pad(ExamineeTable("LastName"), 20) & " "
       Temp = Temp & Pad(ExamineeTable("FirstName"), 12)
       Temp = Temp & Pad(ExamineeTable("SSN"), 10) & " "
       Temp = Temp & Pad(Status, 1)
       Sequence = Sequence + 1
       Temp = Temp & Token & Str$(Sequence)
       If Point < MaxElement Then
          Point = Point + 1
          Array(Point) = Temp
       End If
       ExamineeTable.MoveNext
    Wend
    Call QSort(Array(), Point)
    For Y = 1 To Point
       X = InStr(1, Array(Y), Token, 1)
       If X <> 0 Then
          PArray(Y) = Val(Right$(Array(Y), Len(Array(Y)) - X))
          List2.AddItem Left$(Array(Y), X - 1)
       Else
          PArray(Y) = 1
          List2.AddItem Array(Y)
```

```
        End If
     Next Y
     ExamineeTable.MoveFirst
     Exit Sub

FileEmpty:
   Exit Sub
End Sub

Sub ViewRecord()
'This routine will display one examinee record.
   Dim Temp As String
   Dim X As Integer
   Dim Y As Integer

   List2.Enabled = False
   For X = 0 To List2.ListCount - 1
      If List2.Selected(X) Then
         Call GetRecord(PArray(X + 1))
         SendString = "Last Name:     " & LastName & CRLF
         SendString = SendString & "First Name:    " & FirstName & CRLF
         SendString = SendString & "SSN:           " & SSN & CRLF
         SendString = SendString & "Recruiter ID: "
         Y = InStr(TestInfo, Chr$(10))
         If Y <> 0 Then
            TestInfo = Right$(TestInfo, Len(TestInfo) - Y)
         End If
         SendString = SendString & TestInfo
         ViewExaminee.Show MODAL
      End If
    Next X
    List2.Enabled = True
End Sub

Private Sub Command1_Click()
   SendString = ""
   Unload ExamUtil
End Sub


Private Sub Command3_Click()
   Dim X As Integer
   Dim Found As Integer

   If List2.ListCount < 1 Then
      MsgBox "There are no examinee records to copy."
      Exit Sub
   End If
   For X = 0 To List2.ListCount - 1
      If List2.Selected(X) Then
         Found = True
         X = List2.ListCount
      End If
   Next X
   If Not Found Then
      MsgBox "You must select examinee record(s) from the list."
      Exit Sub
   End If
   FileSelect.Show MODAL
   If SendString <> "" Then
      If SendString = ExamineeDBName Then
```

```
            MsgBox "You cannot select the examinee database currently in use."
            Exit Sub
        End If
        DestFileName = SendString
        'If Not OpenDestFile Then
        '   Exit Sub
        'End If
        Call CopyRecord
    End If
End Sub

Private Sub Command4_Click()
    Dim X As Integer
    Dim Found As Integer

    If List2.ListCount < 1 Then
        MsgBox "There are no examinee records to copy."
        Exit Sub
    End If
    For X = 0 To List2.ListCount - 1
        If List2.Selected(X) Then
            Found = True
            X = List2.ListCount
        End If
    Next X
    If Not Found Then
        MsgBox "You must select examinee record(s) from the list."
        Exit Sub
    End If
    FileSelect.Show MODAL
    If SendString <> "" Then
        If SendString = ExamineeDBName Then
            MsgBox "You cannot select the examinee database currently in use."
            Exit Sub
        End If
        DestFileName = SendString
        'If Not OpenDestFile Then
            'exit sub
        ' endif
        Call MoveRecord
    End If
End Sub

Private Sub Command5_Click()
    Dim X As Integer
    Dim Found As Integer

    If List2.ListCount < 1 Then
        MsgBox "There are no examinee records to delete."
        Exit Sub
    End If

    Found = False
    For X = 0 To List2.ListCount - 1
        If List2.Selected(X) Then
            Found = True
            X = List2.ListCount
        End If
    Next X
    If Not Found Then
        MsgBox "You must select examinee record(s) from the list."
        Exit Sub
```

```
   End If
  ' If List2.ListCount < 1 Then
  '     MsgBox "There are no examinee records to delete."
  '     Exit Sub
  ' End If
   Call DeleteRecord
End Sub


Private Sub Command6_Click()
   Command1.Visible = True
   Command3.Visible = True
   'Command2.Visible = True
   Command4.Visible = True
   Command5.Visible = True
   Command6.Visible = False
   Command7.Visible = True
   Dir1.Visible = False
   Drive1.Visible = False
   File1.Visible = False
End Sub

Private Sub Command7_Click()
   Dim X As Integer
   Dim Found As Integer

 If List2.ListCount < 1 Then
      MsgBox "There are no examinee records to view."
      Exit Sub
 End If

   Found = False
   For X = 0 To List2.ListCount - 1
      If List2.Selected(X) Then
         Found = True
         X = List2.ListCount
      End If
   Next X
   If Not Found Then
      MsgBox "You must select examinee record(s) from the list."
      Exit Sub
   End If
   Call ViewRecord
End Sub

Private Sub Dir1_Change()
   File1.Path = Dir1.Path
End Sub

Private Sub Drive1_Change()
   Dir1.Path = Drive1.Drive
End Sub

Private Sub Form_Load()
   DriveSave = ""
   DirSave = ""
   Dir1.Visible = False
   Drive1.Visible = False
   File1.Visible = False
   Call ReadFile
End Sub
```

FEEDBACK.FRM

```
VERSION 4.00
Begin VB.Form Feedback
   ClientHeight    =   4230
   ClientLeft      =   1095
   ClientTop       =   1515
   ClientWidth     =   6720
   ClipControls    =   0   'False
   ControlBox      =   0   'False
   BeginProperty Font
      name            =   "Times New Roman"
      charset         =   1
      weight          =   400
      size            =   12
      underline       =   0   'False
      italic          =   0   'False
      strikethrough   =   0   'False
   EndProperty
   ForeColor       =   &H00C00000&
   Height          =   4635
   Left            =   1035
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   NegotiateMenus  =   0   'False
   ScaleHeight     =   4230
   ScaleWidth      =   6720
   Top             =   1170
   Width           =   6840
   WindowState     =   2  'Maximized
   Begin VB.CommandButton Command2
      Caption         =   "&Print"
      Default         =   -1  'True
      BeginProperty Font
         name            =   "MS Sans Serif"
         charset         =   1
         weight          =   400
         size            =   8.25
         underline       =   0   'False
         italic          =   0   'False
         strikethrough   =   0   'False
      EndProperty
      Height          =   495
      Left            =   7680
      TabIndex        =   8
      Top             =   5880
      Visible         =   0   'False
      Width           =   1695
   End

   Begin VB.TextBox Text1
      Height          =   495
      Left            =   6480
      PasswordChar    =   "*"
      TabIndex        =   1
      Text            =   "Text1"
      Top             =   5880
      Visible         =   0   'False
      Width           =   2895
   End
```

```
Begin VB.CommandButton Command1
   Caption         =   "&OK"
   BeginProperty Font
      name            =   "MS Sans Serif"
      charset         =   1
      weight          =   400
      size            =   8.25
      underline       =   0    'False
      italic          =   0    'False
      strikethrough   =   0    'False
   EndProperty
   Height          =   495
   Left            =   7680
   TabIndex        =   0
   Top             =   6480
   Width           =   1695
End

Begin VB.Label Label9
   BackColor       =   &H00FFFFFF&
   BeginProperty Font
      name            =   "Arial"
      charset         =   1
      weight          =   700
      size            =   9.75
      underline       =   0    'False
      italic          =   0    'False
      strikethrough   =   0    'False
   EndProperty
   ForeColor       =   &H00C00000&
   Height          =   255
   Left            =   3000
   TabIndex        =   11
   Top             =   3960
   Visible         =   0    'False
   Width           =   3015
End

Begin VB.Label Label8
   BackColor       =   &H00FFFFFF&
   BeginProperty Font
      name            =   "Arial"
      charset         =   1
      weight          =   700
      size            =   9.75
      underline       =   0    'False
      italic          =   0    'False
      strikethrough   =   0    'False
   EndProperty
   ForeColor       =   &H00C00000&
   Height          =   375
   Left            =   3840
   TabIndex        =   10
   Top             =   5040
   Visible         =   0    'False
   Width           =   5415
End

Begin VB.Label Label7
   BackColor       =   &H00FFFFFF&
   BeginProperty Font
      name            =   "Arial"
```

```
         charset          =   1
         weight           =   700
         size             =   9.75
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      ForeColor        =   &H00C00000&
      Height           =   375
      Left             =   3840
      TabIndex         =   9
      Top              =   4800
      Visible          =   0   'False
      Width            =   5415
   End

   Begin VB.Label Label6
      BackColor        =   &H00FFFFFF&
      BeginProperty Font
         name             =   "Arial"
         charset          =   1
         weight           =   700
         size             =   9.75
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      ForeColor        =   &H00C00000&
      Height           =   255
      Left             =   4680
      TabIndex         =   7
      Top              =   6480
      Visible          =   0   'False
      Width            =   1335
   End

   Begin VB.Label Label5
      BackColor        =   &H00FFFFFF&
      BeginProperty Font
         name             =   "Arial"
         charset          =   1
         weight           =   700
         size             =   9.75
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      ForeColor        =   &H00C00000&
      Height           =   255
      Left             =   4680
      TabIndex         =   6
      Top              =   6240
      Visible          =   0   'False
      Width            =   1335
   End

   Begin VB.Label Label4
      BackColor        =   &H00FFFFFF&
      BeginProperty Font
         name             =   "Arial"
         charset          =   1
         weight           =   700
      size             =   9.75
      underline        =   0   'False
      italic           =   0   'False
      strikethrough    =   0   'False
   EndProperty
   ForeColor       =   &H00C00000&
   Height          =   255
   Left            =   4680
   TabIndex        =   5
   Top             =   6000
   Visible         =   0   'False
   Width           =   1335
End

Begin VB.Label Label3
   BackColor       =   &H00FFFFFF&
   BeginProperty Font
      name             =   "Arial"
      charset          =   1
      weight           =   700
      size             =   9.75
      underline        =   0   'False
      italic           =   0   'False
      strikethrough    =   0   'False
   EndProperty
   ForeColor       =   &H00C00000&
   Height          =   375
   Left            =   7560
   TabIndex        =   4
   Top             =   3720
   Visible         =   0   'False
   Width           =   1695
End

Begin VB.Label Label2
   BackColor       =   &H00FFFFFF&
   BeginProperty Font
      name             =   "Arial"
      charset          =   1
      weight           =   700
      size             =   9.75
      underline        =   0   'False
      italic           =   0   'False
      strikethrough    =   0   'False
   EndProperty
   ForeColor       =   &H00C00000&
   Height          =   375
   Left            =   3840
   TabIndex        =   3
   Top             =   4320
   Visible         =   0   'False
   Width           =   2175
End

Begin VB.Label Label1
   BackColor       =   &H00FFFFFF&
   BeginProperty Font
      name             =   "Arial"
      charset          =   1
      weight           =   700
      size             =   9.75
      underline        =   0   'False
```

```
            italic          =   0   'False
            strikethrough   =   0   'False
         EndProperty
         ForeColor       =   &H00C00000&
         Height          =   255
         Left            =   3000
         TabIndex        =   2
         Top             =   3720
         Visible         =   0   'False
         Width           =   3015
      End
      Begin VB.Image Image1
         Height          =   6015
         Left            =   240
         Top             =   240
         Width           =   9135
      End
   End
   Attribute VB_Name = "Feedback"
   Attribute VB_Creatable = False
   Attribute VB_Exposed = False
   Option Explicit

   Dim MyDb As Database
   Dim MyTableDef As Table


   Private Sub Command1_Click()
      If SendString = "1" Then
         If LTrim(RTrim(Text1.Text)) = "" Then
            MsgBox "Recruiter:  You must enter your password to continue."
            Exit Sub
         End If

         Set MyDb = OpenDatabase(SecurityFileName)
         Set MyTableDef = MyDb.OpenTable("Security")
         MyTableDef.Index = "SSNIndex"
         MyTableDef.Seek "=", LTrim(RTrim(Text1.Text))
         If MyTableDef.NoMatch Then
            MsgBox "Cannot Find: " & Text1.Text & ".  Please try again."
            Exit Sub
         End If
         MyTableDef.Close
      End If
      Unload Feedback
   End Sub


   Private Sub Command2_Click()
      Command1.Visible = False
      Command2.Visible = False
      Feedback.PrintForm
      Command1.Visible = True
      Command2.Visible = True
   End Sub

   Private Sub Form_Activate()
      If SendString = "1" Then
         Text1.SetFocus
      Else
         Label1.Caption = Last & ", " & First
      Label1.Visible = True

      Label2.Caption = Format$(AFQT, "00")
      Label2.Visible = True
      Label3.Caption = Date$
      Label3.Visible = True

      Label7.Caption = Format$(AWK, "00") & " " & WKPerformance
      Label7.Visible = True
      Label8.Caption = Format$(AAR, "00") & " " & ARPerformance
      Label8.Visible = True
      Label9.Caption = SSN
      Label9.Visible = True
      If SendString = "3" Then
         Command1.Visible = False
         Command2.Visible = False
         Feedback.PrintForm
         DoEvents
         Unload Feedback
      Else
         Command2.Visible = True
      End If
   End If
End Sub

Private Sub Form_Load()
   If SendString = "1" Then
      Feedback.Picture = LoadPicture(DataPath & "endtest.bmp")
      Text1.Text = ""
      Text1.Visible = True
   Else
      Feedback.Picture = LoadPicture(DataPath & "feedback.bmp")
      Text1.Visible = False
   End If
End Sub


Private Sub Text1_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      Call Command1_Click
   End If
End Sub
```

FILESELECT.FRM

```
VERSION 4.00
Begin VB.Form FileSelect
   BackColor       =   &H00C0C0C0&
   Caption         =   "Select Database File"
   ClientHeight    =   3195
   ClientLeft      =   1140
   ClientTop       =   1515
   ClientWidth     =   6690
   Height          =   3600
   Left            =   1080
   LinkTopic       =   "Form1"
   ScaleHeight     =   3195
   ScaleWidth      =   6690
   Top             =   1170
   Width           =   6810
   Begin VB.CommandButton Command2
      Caption         =   "&Cancel"
      Height          =   375
      Left            =   5280
      TabIndex        =   5
      Top             =   1440
      Width           =   1335
   End

   Begin VB.CommandButton Command1
      Caption         =   "&OK"
      Height          =   375
      Left            =   5280
      TabIndex        =   4
      Top             =   720
      Width           =   1335
   End

   Begin VB.TextBox Text1
      Height          =   375
      Left            =   240
      TabIndex        =   3
      Top             =   720
      Width           =   1935
   End

   Begin VB.FileListBox File1
      Height          =   1815
      Left            =   240
      TabIndex        =   2
      Top             =   1200
      Width           =   1935
   End

   Begin VB.DirListBox Dir1
      Height          =   1605
      Left            =   2520
      TabIndex        =   1
      Top             =   600
      Width           =   2175
   End

   Begin VB.DriveListBox Drive1
      Height          =   315
      Left            =   2520
      TabIndex         =   0
      Top              =   2760
      Width            =   2175
   End
   Begin VB.Label Label3
      Caption          =   "Drives"
      BeginProperty Font
         name             =   "MS Sans Serif"
         charset          =   1
         weight           =   700
         size             =   8.25
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      Height           =   375
      Left             =   2520
      TabIndex         =   8
      Top              =   2400
      Width            =   1695
   End
   Begin VB.Label Label2
      Caption          =   "Folders"
      BeginProperty Font
         name             =   "MS Sans Serif"
         charset          =   1
         weight           =   700
         size             =   8.25
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      Height           =   375
      Left             =   2520
      TabIndex         =   7
      Top              =   120
      Width            =   1695
   End
   Begin VB.Label Label1
      Caption          =   "File Name"
      BeginProperty Font
         name             =   "MS Sans Serif"
         charset          =   1
         weight           =   700
         size             =   8.25
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      Height           =   375
      Left             =   240
      TabIndex         =   6
      Top              =   240
      Width            =   1695
   End
End
Attribute VB_Name = "FileSelect"
Attribute VB_Creatable = False
Attribute VB_Exposed = False
```

```
Option Explicit

Private Sub Command1_Click()
   DriveSave = Drive1.Drive
   DirSave = Dir1.Path
   SendString = Text1.Text
   Unload FileSelect
End Sub

Private Sub Command2_Click()
   DriveSave = Drive1.Drive
   DirSave = Dir1.Path
   SendString = ""
   Unload FileSelect
End Sub


Private Sub Dir1_Change()
   File1.Path = Dir1.Path
End Sub

Private Sub Drive1_Change()
  Dir1.Path = Drive1.Drive
End Sub


Private Sub File1_Click()
   Text1.Text = Dir1.Path
   If Right$(Text1.Text, 1) <> "\" Then
      Text1.Text = Text1.Text & "\"
   End If
   Text1.Text = Text1.Text & File1
End Sub

Private Sub Form_Load()
  Text1.Text = "*.mdb"
  If DriveSave = "" Then
     Drive1.Drive = "C:"
     Dir1.Path = "\"
  Else
     Drive1.Drive = DriveSave
     Dir1.Path = DirSave
  End If
End Sub


Private Sub Text1_Change()
   On Local Error GoTo Cantdoit
   File1.Pattern = Text1.Text
   Exit Sub

Cantdoit:
   Exit Sub
End Sub


Private Sub Text1_KeyPress(KeyAscii As Integer)
   On Local Error GoTo Cantdoit
   If KeyAscii = 13 Then
      File1.Pattern = Text1.Text
   End If
   Exit Sub
```

```
Cantdoit:
   Exit Sub
End Sub
```

FORM1.FRM

```
VERSION 4.00
Begin VB.Form Form1
   Caption         =   "Form1"
   ClientHeight    =   4230
   ClientLeft      =   1095
   ClientTop       =   1515
   ClientWidth     =   6720
   Height          =   4635
   Left            =   1035
   LinkTopic       =   "Form1"
   ScaleHeight     =   4230
   ScaleWidth      =   6720
   Top             =   1170
   Width           =   6840
End
Attribute VB_Name = "Form1"
Attribute VB_Creatable = False
Attribute VB_Exposed = False
```

HELP.FRM

```
VERSION 4.00
Begin VB.Form Help
   Caption         =   "Help"
   ClientHeight    =   6060
   ClientLeft      =   1500
   ClientTop       =   975
   ClientWidth     =   6690
   ClipControls    =   0   'False
   ControlBox      =   0   'False
   Height          =   6465
   Left            =   1440
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   ScaleHeight     =   6060
   ScaleWidth      =   6690
   Top             =   630
   Width           =   6810
   Begin VB.CommandButton Command1
      Caption         =   "&Return to Menu"
      Default         =   -1  'True
      Height          =   495
      Left            =   2280
      TabIndex        =   2
      Top             =   5520
      Width           =   2055
   End

   Begin VB.Frame Frame1
      Height          =   5415
      Left            =   0
      TabIndex        =   0
      Top             =   0
      Width           =   6615
      Begin VB.TextBox Text1
         Height          =   5055
         Left            =   120
         Locked          =   -1  'True
         MultiLine       =   -1  'True
         ScrollBars      =   2  'Vertical
         TabIndex        =   1
         Text            =   "HELP.frx":0000
         Top             =   240
         Width           =   6375
      End
   End
End
Attribute VB_Name = "Help"
Attribute VB_Creatable = False
Attribute VB_Exposed = False
Option Explicit

Sub LoadScreen()
'This routine will load a screen from the CAST database
'and display it in a text box on this 'Help' form.
   CastTable.Index = "Primary"
   CastTable.Seek "=", SendInt
   If Not CastTable.NoMatch Then
      Text1.Text = CastTable("TextInfo")
   End If
End Sub

Private Sub Command1_Click()
   Unload Help
End Sub


Private Sub Form_Load()
   Call LoadScreen
End Sub
```

```
VERSION 4.00
Begin VB.Form ItemWindow
   Appearance      =   0  'Flat
   AutoRedraw      =   -1  'True
   BackColor       =   &H00FFFFFF&
   ClientHeight    =   4020
   ClientLeft      =   1650
   ClientTop       =   1455
   ClientWidth     =   7365
   ClipControls    =   0   'False
   ControlBox      =   0   'False
   BeginProperty Font
      name            =   "MS Sans Serif"
      charset         =   1
      weight          =   700
      size            =   8.25
      underline       =   0   'False
      italic          =   0   'False
      strikethrough   =   0   'False
   EndProperty
   ForeColor       =   &H80000008&
   Height          =   4425
   KeyPreview      =   -1  'True
   Left            =   1590
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   ScaleHeight     =   4020
   ScaleWidth      =   7365
   Top             =   1110
   WhatsThisButton =   -1  'True
   WhatsThisHelp   =   -1  'True
   Width           =   7485
   WindowState     =   2  'Maximized
   Begin VB.CommandButton Command4
      BackColor       =   &H00808080&
      Caption         =   "&Help"
      Height          =   495
      Left            =   7560
      TabIndex        =   6
      TabStop         =   0   'False
      Top             =   6120
      Width           =   1695
   End

   Begin VB.OptionButton Option1
      BeginProperty Font
         name            =   "Times New Roman"
         charset         =   1
         weight          =   700
         size            =   14.25
         underline       =   0   'False
         italic          =   0   'False
         strikethrough   =   0   'False
      EndProperty
      Height          =   330
      Index           =   2
      Left            =   5280
      TabIndex        =   1
      TabStop         =   0   'False
   Top             =   3240
   Width           =   3495
End

Begin VB.OptionButton Option1
   BeginProperty Font
      name            =   "Times New Roman"
      charset         =   1
      weight          =   700
      size            =   14.25
      underline       =   0    'False
      italic          =   0    'False
      strikethrough   =   0    'False
   EndProperty
   Height          =   330
   Index           =   5
   Left            =   5280
   TabIndex        =   4
   TabStop         =   0    'False
   Top             =   5040
   Width           =   3495
End

Begin VB.OptionButton Option1
   BeginProperty Font
      name            =   "Times New Roman"
      charset         =   1
      weight          =   700
      size            =   14.25
      underline       =   0    'False
      italic          =   0    'False
      strikethrough   =   0    'False
   EndProperty
   Height          =   330
   Index           =   4
   Left            =   5280
   TabIndex        =   3
   TabStop         =   0    'False
   Top             =   4440
   Width           =   3495
End

Begin VB.OptionButton Option1
   BeginProperty Font
      name            =   "Times New Roman"
      charset         =   1
      weight          =   700
      size            =   14.25
      underline       =   0    'False
      italic          =   0    'False
      strikethrough   =   0    'False
   EndProperty
   Height          =   330
   Index           =   3
   Left            =   5280
   TabIndex        =   2
   TabStop         =   0    'False
   Top             =   3840
   Width           =   3495
End

Begin VB.OptionButton Option1
```

```
   BeginProperty Font
      name            =    "Times New Roman"
      charset         =    1
      weight          =    700
      size            =    14.25
      underline       =    0   'False
      italic          =    0   'False
      strikethrough   =    0   'False
   EndProperty
   Height          =    330
   Index           =    1
   Left            =    5280
   TabIndex        =    0
   TabStop         =    0   'False
   Top             =    2640
   Width           =    3495
End

Begin VB.CommandButton Command1
   Enabled         =    0   'False
   Height          =    495
   Index           =    5
   Left            =    5160
   TabIndex        =    13
   TabStop         =    0   'False
   Top             =    4920
   Visible         =    0   'False
   Width           =    3735
End

Begin VB.CommandButton Command1
   Enabled         =    0   'False
   Height          =    495
   Index           =    4
   Left            =    5160
   TabIndex        =    12
   TabStop         =    0   'False
   Top             =    4320
   Visible         =    0   'False
   Width           =    3735
End

Begin VB.CommandButton Command1
   Enabled         =    0   'False
   Height          =    495
   Index           =    3
   Left            =    5160
   TabIndex        =    11
   TabStop         =    0   'False
   Top             =    3720
   Visible         =    0   'False
   Width           =    3735
End

Begin VB.CommandButton Command1
   Enabled         =    0   'False
   Height          =    495
   Index           =    1
   Left            =    5160
   TabIndex        =    9
   TabStop         =    0   'False
   Top             =    2520
   Visible         =   0   'False
   Width           =   3735
End

Begin VB.CommandButton Command1
   Enabled         =   0   'False
   Height          =   495
   Index           =   2
   Left            =   5160
   TabIndex        =   10
   TabStop         =   0   'False
   Top             =   3120
   Visible         =   0   'False
   Width           =   3735
End

Begin VB.Frame Frame1
   Caption         =   "Frame1"
   Height          =   6615
   Left            =   120
   TabIndex        =   7
   Top             =   120
   Width           =   9375
   Begin VB.CommandButton Command2
      Caption         =   "&Next Question"
      Height          =   495
      Left            =   360
      TabIndex        =   5
      TabStop         =   0   'False
      Top             =   6000
      Width           =   2295
   End
   Begin VB.PictureBox ItemPicture
      Enabled         =   0   'False
      Height          =   5535
      Left            =   120
      ScaleHeight     =   5475
      ScaleWidth      =   8955
      TabIndex        =   8
      TabStop         =   0   'False
      Top             =   240
      Width           =   9015
      Begin VB.Timer Timer1
         Interval        =   1000
         Left            =   240
         Top             =   1440
      End
      Begin VB.Label Label2
         Caption         =   "E"
         BeginProperty Font
            name            =   "Times New Roman"
            charset         =   1
            weight          =   700
            size            =   18
            underline       =   0   'False
            italic          =   0   'False
            strikethrough   =   0   'False
         EndProperty
         Height          =   375
         Index           =   5
         Left            =   4320
         TabIndex        =   19
      Top              =   4560
      Width            =   255
   End
   Begin VB.Label Label2
      Caption          =   "D"
      BeginProperty Font
         name             =   "Times New Roman"
         charset          =   1
         weight           =   700
         size             =   18
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      Height           =   375
      Index            =   4
      Left             =   4320
      TabIndex         =   18
      Top              =   3960
      Width            =   255
   End
   Begin VB.Label Label2
      Caption          =   "C"
      BeginProperty Font
         name             =   "Times New Roman"
         charset          =   1
         weight           =   700
         size             =   18
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      Height           =   375
      Index            =   3
      Left             =   4320
      TabIndex         =   17
      Top              =   3360
      Width            =   255
   End
   Begin VB.Label Label2
      Caption          =   "B"
      BeginProperty Font
         name             =   "Times New Roman"
         charset          =   1
         weight           =   700
         size             =   18
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      Height           =   375
      Index            =   2
      Left             =   4320
      TabIndex         =   16
      Top              =   2760
      Width            =   255
   End
   Begin VB.Label Label2
      Caption          =   "A"
      BeginProperty Font
         name             =   "Times New Roman"
         charset          =   1
```

```
                 weight            =    700
                 size              =    18
                 underline         =    0    'False
                 italic            =    0    'False
                 strikethrough     =    0    'False
              EndProperty
              Height            =    375
              Index             =    1
              Left              =    4320
              TabIndex          =    15
              Top               =    2160
              Width             =    255
           End
           Begin VB.Label Label1
              Caption           =    "One moment please..."
              BeginProperty Font
                 name              =    "Times New Roman"
                 charset           =    1
                 weight            =    700
                 size              =    15.75
                 underline         =    0    'False
                 italic            =    0    'False
                 strikethrough     =    0    'False
              EndProperty
              Height            =    375
              Left              =    2760
              TabIndex          =    14
              Top               =    1560
              Width             =    3735
           End
        End
     End
  End
  Attribute VB_Name = "ItemWindow"
  Attribute VB_Creatable = False
  Attribute VB_Exposed = False
  Option Explicit

  Const FirstExamineeSlot = 1

  Dim ItemBeginTime As Long
  Dim ItemEndTime As Long

  Dim TestID As Integer
  Dim NextTest As Integer
  Dim IsSample As Integer
  Dim RandomSelection As Integer
  Dim TestLength As Integer
  Dim ExpPtr As Integer
  Dim ExpCount As Integer
  Dim ItemNumber As Integer
  Dim ItemCount As Integer
  Dim Answer As Integer
  Dim Response As Integer
  Dim ExpItemNumber As Integer
  Dim ExperimentalFlag As Integer
  Dim OldPointer As Integer
  Dim Pointer As Integer
  Dim Column As Integer
  Dim Correct As Integer
  Dim FirstPass As Integer
```

```
Dim Table As String * 1420    '35 x 20 is the largest
Dim Params As String * 3500   '257 x 13 is the largest record

Dim Pointers(1 To MaxItems) As Long
Dim EPointers(1 To MaxItems) As Long
Dim Used(1 To MaxItems) As Integer
Dim ExpUsed(1 To MaxItems) As Integer

Dim A, B, C, PVar, Theta, LL, HH, II, AC, BC As Double

Dim ItemBuffer As String
Dim Rand As Integer
Dim GivingExtra As Integer
Dim NumberOfDistractors As Integer
Dim Processing As Integer
'Dim CurrentARTime As Integer
Dim Seconds As Integer



Sub AdminItem(GetNext As Integer)
'This routine checks the examinee's response to the previous question.
'This routine will also update the system's adaptive predictions, and
'the best new item will be determined.
   Dim X As Integer

   Call StopTimer
   Call GetParams
   Response = Pointer
   Option1(Pointer).Value = False
   If Answer = Response Then
      Correct = True
   Else
      Correct = False
   End If
   If Not ExperimentalFlag Then
      Call UpdateMath
   End If
   If WriteDisk Then
      Call WriteData
   End If
   If EnableShowStats Then
      Call DisplayStats
   End If
   If GetNext Then
      Call UpdateStrategy
      Call GetColumn
      Call GetItemNumber
   End If
   For X = 1 To MaxDistractors
      Label2(X).Visible = False
   Next X
   Call SystemPause(0.5)
   Call StartTimer
   DoEvents
End Sub
```

```
Sub CheckRestart()
'This routine will initialize the 'Items Used' array, and then if this
'test administration has been restarted, then the current
'status of the administration will be determined in order to
'properly resume.
   Dim X, EndFound As Integer
   Dim Temp As String
   Dim Result As String

   Call InitUsed
   If Restart Then
      ItemCount = 1
      ExpPtr = 1
      ExpCount = 1
      Temp = OutputString
      X = InStr(1, OutputString, "ARITHMETIC REASONING:", 1)
      If X <> 0 Then  'Aritmetic Reasoning
         NextTest = AR
         EndFound = False
         While Not EndFound ' Cycle past ARITHMETIC REASONING Label
            EndFound = ParseString(Temp, Result)
            If Mid$(Result, 4, 1) = " " And Mid$(Result, 6, 1) = " " Then
               If Mid$(Result, 5, 1) = "N" Then 'Not experimental
                  Theta = Val(Mid$(Result, 13, 10))
                  PVar = Val(Mid$(Result, 24, 9))
               End If
            ElseIf InStr(1, Result, "ARITHMETIC REASONING:", 1) > 0 Then
               EndFound = True
               WKTheta = Theta
               WKPvar = PVar
            End If
         Wend
      Else
         NextTest = WK
      End If
      PVar = InitPVAR(NextTest)
      Theta = InitTheta(NextTest)
      EndFound = False
      While Not EndFound
         EndFound = ParseString(Temp, Result)
         If Not EndFound Then
            If Mid$(Result, 4, 1) = " " And Mid$(Result, 6, 1) = " " Then
               If Mid$(Result, 5, 1) = "N" Then 'Not experimental
                  X = Val(Left$(Result, 3))
                  If X > 0 Then
                     Used(X) = True
                  End If
                  ItemCount = ItemCount + 1
                  Theta = Val(Mid$(Result, 13, 10))
                  PVar = Val(Mid$(Result, 24, 9))
                  Seconds = Seconds + Val(Mid$(Result, 33, 4))
               ElseIf Mid$(Result, 5, 1) = "Y" Then 'Experimental
                  If WKExp(ExpPtr, 2) = ItemCount Then
                     ExpCount = ExpCount + 1
                     If ExpCount = WKExp(ExpPtr, 1) Then
                        ExpPtr = ExpPtr + 1
                        ExpCount = 1
                     End If
                  End If
                  X = Val(Left$(Result, 3))
                  If X > 0 Then
                     ExpUsed(X) = True
                  End If
               End If
            End If
         End If
      Wend
      If NextTest = WK And ItemCount >= WKLength Then
         NextTest = AR
         ItemCount = 1
      End If
   End If
End Sub


Sub ClearOptions()
'This routine simply clears the 'option' tool.  This is done to eliminate
'any item from being 'selected'.
    Dim X As Integer

    For X = 1 To MaxDistractors
       Option1(X).Value = False
       Option1(X).ForeColor = BLACK
    Next X
    OldPointer = 0
    If Command2.Visible Then
       Command2.SetFocus
    End If
End Sub

Private Sub DisplayStats()
'DisplayStats will display the critical values relating to the\
'current test administration on the screen.  DisplayStats is only
'used in testing procedures.
   Dim Z As Integer

   ItemPicture.Cls
   ItemPicture.Print "Item Count  "; ItemCount
   ItemPicture.Print "InfoTable Column:"; Column
   ItemPicture.Print "Random pick from best "; RandomSelection
   For Z = 1 To RandomSelection
      ItemPicture.Print RNDItems(Z)
   Next Z
   ItemPicture.Print "Random Seed  "; Rand
   If TestID = WK Then
      ItemPicture.Print "WK ";
   Else
      ItemPicture.Print "AR ";
   End If
   If ExperimentalFlag Then
      ItemPicture.Print "EXP Item Number "; ExpItemNumber
   End If
   ItemPicture.Print "Item "; ItemNumber
   ItemPicture.Print "A= "; A;
   ItemPicture.Print ", B= "; B;
   ItemPicture.Print ", C= "; C
   ItemPicture.Print "RESPONSE    "; Response
   ItemPicture.Print "ANSWER KEY  "; Answer
   If Correct Then
      ItemPicture.Print "Correct answer"
   Else
      ItemPicture.Print "Wrong answer"
    End If
    ItemPicture.Print "Theta       "; Theta
    ItemPicture.Print "PV          "; PVar
    MsgBox ""
End Sub



Sub EvaluateKey(KeyCode As Integer)
'This routine will check the key the user entered and determine if
'the user intended to select a distractor.
    If Processing Then
        Exit Sub
    End If

    On Local Error GoTo SetToTrue
    If KeyCode = 9 Then
        KeyCode = OldPointer + 1
        If KeyCode > MaxDistractors Then
            KeyCode = 1
        End If
        Call Option1_Click(KeyCode)
        Exit Sub
    End If

    If KeyCode >= 97 Then
        KeyCode = KeyCode - 32
    End If
    If KeyCode = 13 Then
        Call Command2_Click
        Exit Sub
    End If
    KeyCode = KeyCode - 64
    If KeyCode >= 1 And KeyCode <= NumberOfDistractors Then
        Call Option1_Click(KeyCode)
        DoEvents
        Option1(KeyCode).Value = True
        DoEvents
        Option1(KeyCode).SetFocus
        DoEvents
        Exit Sub
    End If
    Exit Sub

SetToTrue:
    Option1(KeyCode).Value = True
    DoEvents
    Resume
End Sub

Sub FinalCalculations(Timeout As Integer)
'This routine performs the final calculations necessary to determine
'the predicted AFQT (and other) scores.
    Dim N8CastEAFQT As Double
    Dim N8CastWK As Double
    Dim N8CastAR As Double
    Dim N8CastPWK As Double
    Dim N8CastPAR As Double

    P1 = 1 / (1 + Exp(ProbParams(1) * WKTheta - ProbParams(2) * ARTheta +
ProbParams(3)))
    If P1 > 0.99 Then
```

```
      P1 = 0.99
      P2 = 0.01
   Else
      P2 = (1 / (1 + Exp(ProbParams(4) * WKTheta - ProbParams(5) * ARTheta -
ProbParams(6)))) - P1
   End If
   P1 = Int(P1 * 100 + 0.5)
   P2 = Int(P2 * 100 + 0.5)
   P3 = 100 - (P1 + P2)

' **** DEVELOP AFQT SCORE ****
   N8CastEAFQT = RegCoefWK * WKTheta + RegCoefAR * ARTheta + RegConst
'  **** DEVELOP FINAL SCORES AS TWO-CHARACTER STRINGS ****
   AFQT = N8CastEAFQT
   If AFQT < 1 Then
      AFQT = 1
   End If
 ' Correct WkTheta and ARTheta to 1980 Youth Population
 ' using mean and sd data from Wise et al. 1989 report on CAST.
   AWK = 50 + (((WKTheta + 0.247) / 0.602) * 10)
   AAR = 50 + (((ARTheta + 0.213) / 0.732) * 10)
   If AWK < 20 Then
      AWK = 20
   End If
   If AAR < 26 Then
      AAR = 26
   End If
   If AWK > 61 Then
      AWK = 61
   End If
   If AAR > 66 Then
      AAR = 66
   End If
End Sub


Function GetCurrentAFQT() As Double
'The current AFQT score is determined using the following formula:
   GetCurrentAFQT = RegCoefWK * WKTheta + RegCoefAR * Theta + RegConst
End Function


Sub GetTimeoutAnswer()
'Quickly get the answer to an item.  Needed when a timeout occurs
'and the correct examinee record must be constructed (containing
'the correct answer for each item).  Timeouts are handled by
'completing the test getting the rest of the answers wrong.
   Dim Finished As Integer
   Dim Ptr As Integer
   Dim Char As String * 1

   Call LoadItem(ItemNumber, TestID)
   Finished = False
   Ptr = 1
   While Not Finished
      Char = Mid$(ItemBuffer, Ptr, 1)
      Ptr = Ptr + 1
      If Char > Chr$(0) And Char < Chr$(9) Then
         Answer = Asc(Char)
         Finished = True
      End If
   Wend
```

```
End Sub

Function PercentileFunction(Z As Double) As Double
'This function returns a percentile.
   Dim FL As Double
   Dim Q As Double, P As Double


   FL = 0: Rem (PERCENTILE FUNCTION)
   If Z < 0 Then FL = 1: Z = Abs(Z)
   Q = 1! + 0.196854 * Z + 0.115194 * Z * Z + 0.000344 * Z ^ 3 + 0.019527 * Z
^ 4
   Q = Q ^ 4
   P = 1 - 1 / (2 * Q)
   If FL = 1 Then P = 1 - P
   If P < 0.01 Then P = 0.01
   PercentileFunction = P
End Function

Sub FinalRoutines(Timeout As Integer)
'This routine calls most of the final routines that determine:
'the final test administration outcome, the final data to be written to the
'file and then the test feedback procedures are called.
    Dim X As Integer
    TestID = FINAL
    ItemPicture.Cls
    For X = 1 To MaxDistractors
       Command1(X).Visible = False
       Option1(X).Visible = False
       Label2(X).Visible = False
    Next X
    Label1.Visible = True
    DoEvents
    ARTheta = Theta
    ARPvar = PVar
    Call FinalCalculations(Timeout)
    Call GetPerformance(OutputString)
    OutputString = OutputString & Date$ & "   " & Time$ & CRLF
    OutputString = OutputString & "Complete:" & CRLF
    OutputString = OutputString & Format$(AFQT, "###") & "," & Format$(AWK,
"###") & "," & Format$(AAR, "###") & "," & Str$(P1) & "," & Str$(P2) & "," &
Str$(P3)
    If WriteDisk Then
       Call WriteBuffer(True)
    End If
    SendString = "1"
    Feedback.Show MODAL
    SendString = "2"
    Feedback.Show MODAL
End Sub


Sub GetExpItemNumber()
'Get an experimental item number
   Dim Temp, Rand As Integer

   If TestID = WK Then
      Temp = MaxWKExp
   Else
      Temp = MaxARExp
   End If
   Rand = 0
   While Rand < 1 Or Rand > Temp
      Rand = Int(Rnd * 100)
      If Rand > 0 Then
         If Not ExpUsed(Rand) And Rand > 0 And Rand <= Temp Then
            ExpUsed(Rand) = True
            ExpItemNumber = Rand
         Else
            Rand = 0
         End If
      End If
   Wend
   ExperimentalFlag = True
End Sub

Sub IntroCorrect()
'This routine simply displays a message on the screen that tells the
'examinee that the sample question was answered correctly.
   Banner = "Good, " & First & ","
   BannerX = 1700
   BannerY = 900
   If NextTest = WK Then
      SendString = Str$(INTRO) & ",11,11"
   Else
      SendString = Str$(INTRO) & ",9,9"
   End If
   SendInt = ALLOW_BACKUP
   Dialog.Show MODAL
   Banner = ""
End Sub

Sub IntroInCorrect()
'This routine simply displays a message on the screen that tells the
'examinee that the sample question was answered incorrectly.
   If NextTest = WK Then
      SendString = Str$(INTRO) & ",12,12"
   Else
      SendString = Str$(INTRO) & ",10,10"
   End If
   SendInt = 0
   Dialog.Show MODAL
End Sub


Sub ReDisplayScreen()
'This routine will render several buttons unavailable for re-display
'purposes.
   Dim X
   For X = 1 To MaxDistractors
      Command1(X).Visible = False
      Option1(X).Visible = False
      Option1(X).Caption = ""
      Option1(X).Value = False
      Option1(X).ForeColor = BLACK
      Label2(X).Visible = False
   Next X
   DoEvents
   Call ShowItem
End Sub
```

```
Sub WriteBuffer(CompleteFlag As Integer)
'The current test results supplied by the examinee are written to the
'EXAMINEE database.
    ExamineeTable.Edit
    If CompleteFlag Then
       ExamineeTable("CompleteFlag") = True
    End If
    ExamineeTable("TestInfo") = OutputString
    ExamineeTable.Update
End Sub

Sub WriteTimeoutRecord()
'If a timeout condition is detected, the system will act like the examinee
'completed the test, however, got all the remaining questions wrong.
   Dim CorrectMark As String * 1
   Dim Temp As String
   Dim ItemLoop As Integer

   GoSub TimeoutProcess
   ExperimentalFlag = False
   If WriteDisk Then
      For ItemLoop = ItemCount + 1 To TestLength
         Call UpdateStrategy
         Call GetColumn
         Call GetItemNumber
         Call GetTimeoutAnswer
         Call StartTimer
         GoSub TimeoutProcess
      Next ItemLoop
   End If
   Exit Sub

TimeoutProcess:
   Call StopTimer
   Call GetParams
   Response = 0
   Correct = False
   If Not ExperimentalFlag Then
      Call UpdateMath
   End If
   If WriteDisk Then
      Call WriteData
   End If
   Return
End Sub

Private Sub Command1_Click(Index As Integer)
   Option1(Index).Value = True
   Call Option1_Click(Index)
End Sub

Private Sub Command1_KeyPress(Index As Integer, KeyAscii As Integer)
   If Processing Then
      KeyAscii = 0
   Else
      Call EvaluateKey(KeyAscii)
   End If
End Sub

Private Sub Command2_Click()
   Dim EndedWithExp As Integer
```

```
    Dim X As Integer
    Dim ProvisionalAFQT As Double

    Processing = True
    For X = 1 To NumberOfDistractors
       If Option1(X).Value Then
          Pointer = X
          X = NumberOfDistractors
       End If
    Next X

    If Pointer = 0 Then
       MsgBox "Please select an answer before you press the 'Next Question'
button."
       Processing = False
       DoEvents
       Call ClearOptions
       Exit Sub
    End If

    EndedWithExp = False
    If IsSample Then
       ItemPicture.Cls
       If TestID = INTRO Then
          If Pointer = Answer Then
             Call IntroCorrect
             If SendInt = ALLOW_BACKUP Then
                SendInt = 0
                X = OldPointer
                Call ShowItem
                OldPointer = X
                Processing = False
                Exit Sub
             Else
                TestID = NextTest
                Call SubtestInit
                IsSample = False
             End If
             Processing = False
             Exit Sub
          Else
             Call IntroInCorrect
             X = OldPointer
             Call ShowItem
             OldPointer = X
             Processing = False
             Exit Sub
          End If
       End If
    End If

    If AllItemDebug Then
'
' Set ExperimentalFlag if I want EXPs
'
' ExperimentalFlag = True
'
       ItemNumber = ItemNumber + 1
       If ExperimentalFlag Then
          If TestID = WK Then
             TestLength = MaxWKExp
          Else
```

```
         TestLength = MaxARExp
      End If
      ExpItemNumber = ItemNumber
   End If
   If ItemNumber > TestLength Then
      If TestID = WK Then
         TestID = AR
         Call SubtestInit
         Processing = False
         Exit Sub
      Else
         Unload ItemWindow
         Processing = False
         Exit Sub
      End If
   End If
   If ExperimentalFlag Then
      Call LoadItem(ExpItemNumber, TestID + 2)
   End If
Else
   If ExperimentalFlag Then
      ExpCount = ExpCount + 1
      If TestID = WK Then
         If ExpCount > WKExp(ExpPtr, 1) Then
            Call AdminItem(False)
            ExperimentalFlag = False
            ExpPtr = ExpPtr + 1
            ExpCount = 1
            If ItemCount + 1 <= TestLength Then
               Call LoadItem(ItemNumber, TestID)
               Call ShowItem
               Processing = False
               Exit Sub
            Else
               EndedWithExp = True
            End If
         Else
            Call AdminItem(False)
            Call GetExpItemNumber
            Call LoadItem(ExpItemNumber, TestID + 2)
            Call ShowItem
            Processing = False
            Exit Sub
         End If
      Else
         If ExpCount > ARExp(ExpPtr, 1) Then
            Call AdminItem(False)
            ExperimentalFlag = False
            ExpPtr = ExpPtr + 1
            ExpCount = 1
            If ItemCount + 1 <= TestLength Then
               Call LoadItem(ItemNumber, TestID)
               Call ShowItem
               Processing = False
               Exit Sub
            Else
               EndedWithExp = True
            End If
         Else
            Call AdminItem(False)
            Call GetExpItemNumber
            Call LoadItem(ExpItemNumber, TestID + 2)
```

```
                  Call ShowItem
                  Processing = False
                  Exit Sub
               End If
            End If
         End If
         If ItemCount + 1 > TestLength Then
            If TestID = WK Then
               If Not GivingExtra And Theta < ExtraValue(1) And ExtraItems(1) > 0
Then
                  GivingExtra = True
                  TestLength = TestLength + ExtraItems(1)
                  Call AdminItem(True)
               Else
                  If WKExpAdmin > 0 Then
                     If WKExp(ExpPtr, 2) = ItemCount + 1 Then
                        Call AdminItem(False)
                        Call GetExpItemNumber
                        Call LoadItem(ExpItemNumber, TestID + 2)
                        Call ShowItem
                        Processing = False
                        Exit Sub
                     End If
                  End If
                  If Not EndedWithExp Then
                     Call AdminItem(False)
                  End If
                  If WriteDisk Then
                     OutputString = OutputString & "ARITHMETIC REASONING:" & CRLF
                     Call WriteBuffer(False)
                  End If
                  WKTheta = Theta
                  WKPvar = PVar
                  ItemPicture.Cls
                  OutputString = OutputString & "Instruction Sequence Begin:"
                  OutputString = OutputString & Date$ & "   " & Time$ & CRLF
                  If WriteDisk Then
                     Call WriteBuffer(False)
                  End If
                  SendString = Str$(INTRO) & ",14,14"
                  SendInt = 0
                  Dialog.Show MODAL
                  SendString = Str$(INTRO) & ",15,16"
                  SendInt = 0
                  Dialog.Show MODAL
                  IsSample = True
                  TestID = INTRO
                  NextTest = AR
                  Call LoadItem(102, TestID)
                  Call ShowItem
                  OutputString = OutputString & "Instruction Sequence End:    "
                  OutputString = OutputString & Date$ & "   " & Time$ & CRLF
                  If WriteDisk Then
                     Call WriteBuffer(False)
                  End If
                  Processing = False
                  Exit Sub
               End If
            Else 'AR
               ProvisionalAFQT = GetCurrentAFQT()
               If (ProvisionalAFQT > ExtraValue(2)) And (ProvisionalAFQT <
ExtraValue(3)) And (TestLength < ARLength + ExtraItems(2)) Then
```

```
            'If Not GivingExtra And Theta < ExtraValue(2) And ExtraItems(2) >
0 Then
               GivingExtra = True
               TestLength = TestLength + 1
               Call AdminItem(True)
            Else
               If ARExpAdmin > 0 Then
                  If ARExp(ExpPtr, 2) = ItemCount + 1 Then
                     Call AdminItem(False)
                     Call GetExpItemNumber
                     Call LoadItem(ExpItemNumber, TestID + 2)
                     Call ShowItem
                     Processing = False
                     Exit Sub
                  End If
               End If
               If Not EndedWithExp Then
                  Call AdminItem(False)
               End If
               Call FinalRoutines(False)
               Unload ItemWindow
               Processing = False
               Exit Sub
            End If
         End If
      Else
         Call AdminItem(True)
         If TestID = AR Then
            'If CurrentARTime >= ARTimeLimit Then
            '   Call FinalRoutines(False)
            '   Unload ItemWindow
            '   Exit Sub
            'End If
         End If
      End If
      If Not ExperimentalFlag Then
         ItemCount = ItemCount + 1
      End If
      If TestID = WK And WKExpAdmin > 0 Then
         If WKExp(ExpPtr, 2) = ItemCount Then
            Call GetExpItemNumber
         End If
      ElseIf TestID = AR And ARExpAdmin > 0 Then
         If ARExp(ExpPtr, 2) = ItemCount Then
            Call GetExpItemNumber
         End If
      End If
      If ExperimentalFlag Then
         Call LoadItem(ExpItemNumber, TestID + 2)
      End If
   End If
   If Not ExperimentalFlag Then
      Call LoadItem(ItemNumber, TestID)
   End If
   Call ShowItem
   Processing = False
End Sub

Private Sub Command2_KeyPress(KeyAscii As Integer)
    If Processing Then
      KeyAscii = 0
   Else
```

```
      Call EvaluateKey(KeyAscii)
   End If
End Sub




Private Sub Command4_Click()
   Dim X As Integer
   Dim Switch As Integer

   Switch = 0
   For X = 1 To NumberOfDistractors
      If Option1(X).Value Then
         Switch = X
         X = NumberOfDistractors
      End If
   Next X

   ItemEndTime = (Timer - ItemBeginTime)
   SendInt = HELPSCREEN
   SendString = Str$(INTRO) & ",99,99"
   Dialog.Show MODAL
   If SendInt = QUIT Then
      If WriteDisk Then
         OutputString = OutputString & "Interrupt:" & Date$ & "   " & Time$ &
CRLF
         Call WriteBuffer(False)
      End If
      Unload ItemWindow
   End If
   Call ReDisplayScreen
   If Switch > 0 Then
      Call Option1_Click(Switch)
   End If
   ItemBeginTime = Timer - ItemEndTime
End Sub


Private Sub Command4_GotFocus()
    Dim X As Integer

    For X = 1 To MaxDistractors
       Option1(X).Value = False
       Option1(X).ForeColor = BLACK
    Next X
    OldPointer = 0
    Command4.Caption = "&HELP"
End Sub


Private Sub Command4_KeyPress(KeyAscii As Integer)
   If Processing Then
      KeyAscii = 0
   Else
      Call EvaluateKey(KeyAscii)
   End If
End Sub
```

```
Private Sub Command4_LostFocus()
   Command4.Caption = "&Help?"
End Sub

Private Sub Form_Activate()
   If Not DebugFlag Then
      On Error GoTo GeneralError
   End If
   If FirstPass Then
      FirstPass = False
      ItemWindow.ForeColor = QBColor(FColor)
      ItemWindow.BackColor = QBColor(BColor)
      Call CheckRestart
      Call TestIntro
   End If
   Exit Sub

GeneralError:
   MsgBox "An error has occurred."
   Unload ItemPicture
End Sub

Private Sub Form_KeyDown(KeyCode As Integer, Shift As Integer)
   If Processing Then
      KeyCode = 0
   End If
End Sub


Private Sub Form_KeyPress(KeyAscii As Integer)
   If Processing Then
      If KeyAscii = 13 Then
         MsgBox "Please do not hold the ENTER key down."
         KeyAscii = 0
         Call SystemPause(0.5)
      End If
   End If
   'Call EvaluateKey(KeyAscii)
End Sub


Private Sub Form_KeyUp(KeyCode As Integer, Shift As Integer)
   If Processing Then
      KeyCode = 0
   End If
End Sub


Private Sub Form_Load()
   Seconds = 0
   TestID = INTRO
   NextTest = WK
   Banner = ""
   ItemPicture.FontSize = ItemFontSize
   FirstPass = True
   Label1.Visible = False
   Frame1.Caption = ""
   SendInt = 0
   Processing = False
End Sub
```

```
Private Sub GetColumn()
'This routine will calculate the correct column in the information table
'based on the examinee's current performance.  Bounds checking are also
'performed.
   Column = Int(AC * Theta + BC + 0.5)
   If Column < 1 Then Column = 1
   If Column > II Then Column = II
End Sub

Private Sub GetItemNumber()
'Get an item number
   Dim Ptr, GotOne As Integer
   Dim HiByte, Z As Integer

   Rand = 0
   While Rand < 1 Or Rand > RandomSelection
      Rand = Int(Rnd * 10)
   Wend
   GotOne = False
   While Not GotOne
      GoSub GetTheItemNumber
      If Not GotOne Then
         Column = Column - 1
         If Column < 1 Then
            MsgBox "Info table error:  Looking for row 0"
            End
         End If
      End If
  Wend
  Used(ItemNumber) = True
  Exit Sub

GetTheItemNumber:
   Ptr = ((InfoRows * (Column - 1)) * 2) + 1
   For Z = 1 To RandomSelection
      GotOne = False
      If Ptr > (InfoRows * InfoColumns * 2) Then
         Return
      End If
      While Not GotOne
         ItemNumber = Asc(Mid$(Table, Ptr, 1))
         HiByte = Asc(Mid$(Table, Ptr + 1, 1))
         While HiByte > 0
            ItemNumber = ItemNumber + 256
            HiByte = HiByte - 1
         Wend
         Ptr = Ptr + 2
         If Not Used(ItemNumber) Then
            RNDItems(Z) = ItemNumber
            GotOne = True
         End If
      Wend
   Next Z
   ItemNumber = RNDItems(Rand)
   ExperimentalFlag = False
   Return
End Sub

Private Sub GetParams()
'Pull the correct parameters out of the buffer named 'Params'.
   Dim Ptr, Z As Integer
   Dim AA$, BB$, CC$
   Ptr = (13 * (ItemNumber - 1)) + 1
   AA$ = "": BB$ = "": CC$ = ""
   For Z = 1 To 4
      AA$ = AA$ + Mid$(Params, Ptr, 1)
      Ptr = Ptr + 1
   Next Z
   For Z = 1 To 5
      BB$ = BB$ + Mid$(Params, Ptr, 1)
      Ptr = Ptr + 1
   Next Z
   For Z = 1 To 4
      CC$ = CC$ + Mid$(Params, Ptr, 1)
      Ptr = Ptr + 1
   Next Z
   A = Val(AA$): B = Val(BB$): C = Val(CC$)
End Sub


Private Sub InitUsed()
'Set the entire array holding the items that have been previously used to
'FALSE or unused.
   Dim Z As Integer
   For Z = 1 To MaxItems
      Used(Z) = False
      ExpUsed(Z) = False
   Next Z
End Sub

Private Sub LoadItem(RecordNumber As Integer, Offset)
'An item from the CAST database is loaded into an item buffer.
   Dim Finished, X, Y, Z, DisFound As Integer
   Dim Distractor As Integer
   Dim EndFound As Integer
   Dim Char As String * 1
   Dim Temp, Junk As String

   Finished = False
   DisFound = False
   ItemBuffer = ""
   Junk = ""
   For X = 1 To MaxDistractors
      Command1(X).Visible = False
      Option1(X).Visible = False
      Option1(X).Caption = ""
      Option1(X).Value = False
      Option1(X).ForeColor = BLACK
      Label2(X).Visible = False
   Next X
   DoEvents

   CastTable.Seek "=", RecordNumber + (Offset * 1000)
   If Not CastTable.NoMatch Then
      Temp = CastTable("TextInfo")
      X = Len(Temp)
      Distractor = 0
      EndFound = False
      For Z = 1 To X
         Char = Mid$(Temp, Z, 1)
         Select Case Char
            Case Chr$(13):
               If DisFound Then
```

```
                  If TestID = AR Then
                     Distractor = Distractor + 1
                     If Distractor = MaxDistractors + 2 Then
                        EndFound = True
                     End If
                  Else
                     If Len(LTrim(RTrim(Junk))) = 1 And Val(Junk) > 0 And
Val(Junk) < 9 Then
                        EndFound = True
                     End If
                  End If
                  If EndFound Then
                     For Y = Len(ItemBuffer) To 1 Step -1
                        If Mid$(ItemBuffer, Y, 1) = Chr$(0) Then
                           ItemBuffer = Left$(ItemBuffer, Y - 1)
                           ItemBuffer = ItemBuffer & Chr$(Val(Junk))
                           Y = 0
                        End If
                     Next Y
                     Z = X + 1
                  Else
                     ItemBuffer = ItemBuffer & Chr$(0)
                     Junk = ""
                  End If
               Else
                  ItemBuffer = ItemBuffer & Chr$(13)
               End If
            Case Chr$(10):
            Case "!":
               DisFound = True
            Case "|":
               DisFound = True
            Case Else
               ItemBuffer = ItemBuffer & Char
               If DisFound Then
                  Junk = Junk & Char
               End If
         End Select
      Next Z
   End If
End Sub

Private Sub LoadTables(TEST As Integer)
'The correct info table buffer and parameter buffer are loaded.
   Dim FileNum As Integer
   Dim X As Integer

   FileNum = FreeFile
   If Not DebugFlag Then
      On Local Error GoTo LTError
   End If
   If TEST = WK Then
      CastTable.Seek "=", 9002
      Table = CastTable("TextInfo")
      CastTable.Seek "=", 9000
      Params = CastTable("TextInfo")
   Else
      CastTable.Seek "=", 9003
      Table = CastTable("TextInfo")
      CastTable.Seek "=", 9001
      Params = CastTable("TextInfo")
   End If
   Exit Sub

LTError:
   MsgBox "Cannot load tables and/or parameters"
   Unload ItemWindow
End Sub

Private Sub MathInit()
'Initialize certain variables used to calculate administer an
'adaptive test to beginning values.
   A = 0
   B = 0
   C = 0
   LL = -2.25
   HH = 2.25
   II = InfoColumns
   AC = (II - 1) / (HH - LL)
   BC = (HH - II * LL) / (HH - LL)
End Sub



Private Sub ShowItem()
'Show the item that is currently being held in the buffer.
   Dim Z, HTab, VTab, Ptr As Integer
   Dim Finished, Distractor As Integer
   Dim Char As String * 1
   Dim Temp As String
   Dim VTabStart, HTabStart As Integer

   If Not DebugFlag Then
      On Local Error GoTo ShowItemError
   End If

   If TestID = AR Then
      VTabStart = 10 * Screen.TwipsPerPixelY
      HTabStart = Screen.TwipsPerPixelX
   Else
      VTabStart = 30 * Screen.TwipsPerPixelY
      HTabStart = 5 * Screen.TwipsPerPixelX
   End If
   ItemPicture.Cls
   Finished = False
   Distractor = 0
   HTab = HTabStart: VTab = VTabStart
   ItemPicture.CurrentX = HTab * Screen.TwipsPerPixelX
   ItemPicture.CurrentY = VTab
   Ptr = 1
   While Not Finished
      Char = Mid$(ItemBuffer, Ptr, 1)
      Ptr = Ptr + 1
      If Char = Chr$(0) Then
         Distractor = Distractor + 1
         Label2(Distractor).Visible = True
         Option1(Distractor).Caption = "  "
      ElseIf Char > Chr$(0) And Char < Chr$(9) Then
         Answer = Asc(Char)
         Finished = True
      ElseIf Char = Chr$(13) Then
         HTab = HTabStart
         VTab = VTab + TextHeight("A") + 70
         ItemPicture.CurrentX = HTab * Screen.TwipsPerPixelX
```

```
            ItemPicture.CurrentY = VTab
        Else
            If Char = Chr$(InverseOn) Then
                ItemPicture.FontUnderline = True
                ItemPicture.ForeColor = QBColor(DColor)
                Temp = ""
                While Char <> Chr$(InverseOff)
                    Char = Mid$(ItemBuffer, Ptr, 1)
                    Ptr = Ptr + 1
                    If Char <> Chr$(InverseOff) Then
                        ItemPicture.Print Char;
                    End If
                Wend
                ItemPicture.FontUnderline = False
                ItemPicture.ForeColor = FColor
            Else
                If Distractor > 0 Then
                    Option1(Distractor).Caption = Option1(Distractor).Caption &
Char
                Else
                    ItemPicture.Print Char;
                End If
            End If
        End If
    Wend
    OldPointer = 0
    Pointer = 0
    If TestID = INTRO Then
        Frame1.Caption = "Sample"
    Else
        If AllItemDebug Then
            Frame1.Caption = "Item Number: " & Str$(ItemNumber)
        Else
            Frame1.Caption = "Item Number: " & Str$(ItemCount)
            If ExperimentalFlag Then
                Frame1.Caption = Frame1.Caption & " Exp."
            End If
        End If
    End If
    NumberOfDistractors = Distractor
    For Z = 1 To NumberOfDistractors
        Command1(Z).Visible = True
        Option1(Z).Visible = True
    Next Z
    DoEvents
    Exit Sub

ShowItemError:
    MsgBox "An error was encountered while trying to display item #: " &
Str$(ItemNumber)
End Sub

Private Sub StartTimer()
'Capture beginning 'Timer' value
    ItemBeginTime = Timer
End Sub

Private Sub StopTimer()
'Capture ending 'Timer' value
    ItemEndTime = (Timer - ItemBeginTime)
End Sub
```

```
Private Sub SubtestInit()
'Initialize the subtest (WK or AR) with starting values and
'proper indentification inside the EXAMINEE record.  Also, the
'first item is selected, loaded, and displayed.
   RandomSelection = 5
   GivingExtra = False

   If TestID = WK Then
      If AllItemDebug Then
         TestLength = MaxWKItems
      Else
         TestLength = WKLength
         If WriteDisk Then
            OutputString = OutputString & "WORD KNOWLEDGE:" & CRLF
            Call WriteBuffer(False)
         End If
      End If
   Else
      If AllItemDebug Then
         TestLength = MaxARItems
      Else
         TestLength = ARLength
      End If
   End If
   OutputString = OutputString & Date$ & "   " & Time$ & CRLF
   If WriteDisk Then
      Call WriteBuffer(False)
   End If
   If Not Restart Then
      ExpPtr = 1
      ExpCount = 1
      PVar = InitPVAR(TestID)
      Theta = InitTheta(TestID)
   End If
   Call LoadTables(TestID)
   Call MathInit

   ExperimentalFlag = False
   If AllItemDebug Then
      ItemNumber = 1
   Else
      Call GetColumn
      Call GetItemNumber
      If Not Restart Then
         ItemCount = 1
      End If
   End If

   If Restart Then
      Restart = False
   End If
   If TestID = WK And WKExpAdmin > 0 Then
      If WKExp(ExpPtr, 1) > 0 And WKExp(ExpPtr, 2) = ItemCount Then
         Call GetExpItemNumber
      End If
   End If
    If TestID = AR And ARExpAdmin > 0 Then
      If ARExp(ExpPtr, 1) > 0 And ARExp(ExpPtr, 2) = ItemCount Then
         Call GetExpItemNumber
      End If
   End If
   If ExperimentalFlag Then
```

```
      Call LoadItem(ExpItemNumber, TestID + 2)
   Else
      Call LoadItem(ItemNumber, TestID)
   End If
   Call ShowItem
   Call StartTimer
   If TestID = AR Then
      Seconds = 0
   End If
End Sub


Private Sub TestIntro()
'This routine will call a series of screens located in the CAST database
'file that are used to present an introduction sequence to the examinee.
   Dim Z As Integer
   Const IntroScreens = 10

   If Not DebugFlag Then
      On Local Error GoTo TestIntroError
   End If
   OutputString = OutputString & "Instruction Sequence Begin:"
   OutputString = OutputString & Date$ & "   " & Time$ & CRLF
   If WriteDisk Then
      Call WriteBuffer(False)
   End If
   IsSample = True

   If Restart And NextTest = AR Then
      SendString = Str$(INTRO) & "," & Str$(IntroScreenStart) & "," &
Str$(IntroScreenEnd - 2)
   Else
      SendString = Str$(INTRO) & "," & Str$(IntroScreenStart) & "," &
Str$(IntroScreenEnd)
   End If
   SendInt = 0
   Dialog.Show MODAL
   If Restart And NextTest = AR Then
      SendString = Str$(INTRO) & ",15,16"
      SendInt = 0
      Dialog.Show MODAL
   End If
   If Restart And NextTest = AR Then
      Call LoadItem(102, TestID)
   Else
      Call LoadItem(101, TestID)
   End If
   Call ShowItem
   OutputString = OutputString & "Instruction Sequence End:    "
   OutputString = OutputString & Date$ & "   " & Time$ & CRLF
   If WriteDisk Then
      Call WriteBuffer(False)
   End If
   Exit Sub

TestIntroError:
   MsgBox "Cannot find: " & IntroImage
   Unload ItemWindow
End Sub

Private Sub UpdateMath()
'All adaptive test variables are appropriately updated.
```

```
   Dim SS, S, XX, YY, ZZ, Temp, DD, PP As Double

   SS = PVar + 1 / (A * A)
   S = Sqr(SS)
   XX = (Theta - B) / S
   ZZ = Abs(XX)
   Temp = 1 / (1 + 0.2316419 * ZZ)
   YY = -XX * XX / 2
   If YY > 85 Then YY = 85
   If YY < -85 Then YY = -85
   DD = 0.3989423 * Exp(YY)
   PP = 1! - DD * Temp * ((((1.330274 * Temp - 1.821256) * Temp + 1.781478) *
Temp - 0.3565638) * Temp + 0.3193815)
   If XX < 0 Then PP = 1 - PP
   If Correct Then
      ZZ = DD / (PP + C / (1 - C))
   Else
      ZZ = -DD / (1 - PP)
   End If
   Theta = Theta + ZZ * PVar / S
   PVar = PVar - PVar * PVar * ZZ * (ZZ + XX) / SS
End Sub

Private Sub UpdateStrategy()
'This routine will allow the test designed to modify the randomness
'supplied by the test.
   'If RandomSelection > 1 Then
   '   RandomSelection = RandomSelection - 1
   'Else
   '   RandomSelection = 1
   'End If
End Sub


Private Sub WriteData()
'The 'OutputString' varible used to hold the examinee's test performance
'data is being properly formatted after the last item has been answered.
'This data is then always written to the EXAMINEE database by the
'WriteBuffer routine.

   Dim CorrectMark As String * 1
   Dim Temp As String

   If WriteDisk Then
      If Correct Then
         CorrectMark = "Y"
      Else
         CorrectMark = "N"
      End If
      If ExperimentalFlag Then
         OutputString = OutputString & Format(ExpItemNumber, "000") & " Y "
      Else
         OutputString = OutputString & Format(ItemNumber, "000") & " N "
      End If
      OutputString = OutputString & Chr$(48 + Answer) & " "
      OutputString = OutputString & Chr$(48 + Response) & " "
      OutputString = OutputString & CorrectMark & " "
      If Theta >= 0 Then
         OutputString = OutputString & " "
       End If
      OutputString = OutputString & Format(Theta, "000.0000") & " "
      If PVar >= 0 Then
         OutputString = OutputString & " "
      End If
      OutputString = OutputString & Format(PVar, "000.0000") & " "
      OutputString = OutputString & Format(ItemEndTime, "0000") & CRLF
      Call WriteBuffer(False)
   End If
End Sub

Private Sub ItemPicture_KeyPress(KeyAscii As Integer)
   If Processing Then
      KeyAscii = 0
   Else
      Call EvaluateKey(KeyAscii)
   End If
End Sub


Private Sub Option1_Click(Index As Integer)
   If OldPointer = 0 Then
      OldPointer = Index
   Else
      Option1(OldPointer).ForeColor = BLACK
   End If
   Option1(Index).ForeColor = BLUE
   Option1(Index).Value = True
   If Option1(Index).Enabled And Option1(Index).Visible Then
      Option1(Index).SetFocus
   End If
   OldPointer = Index
End Sub


Private Sub Option1_DblClick(Index As Integer)
If Not Processing Then
   Option1(Index).Value = True
   Call Option1_Click(Index)
   Call Command2_Click
Else
   MsgBox "Slow down, please.  Answer each question carefully."
End If
End Sub


Private Sub Option1_KeyPress(Index As Integer, KeyAscii As Integer)
   If Processing Then
      KeyAscii = 0
   Else
      Call EvaluateKey(KeyAscii)
   End If
End Sub


Private Sub Timer1_Timer()
   If TestID = AR Then
      Seconds = Seconds + 1
      If Seconds >= ARTimeLimit Then
         Call WriteTimeoutRecord
         Call FinalRoutines(True)
         Unload ItemWindow
         Exit Sub
      End If
```

```
    End If
End Sub
```

```
VERSION 4.00
Begin VB.Form PWord
   Caption         =   "Password Maintenance"
   ClientHeight    =   4230
   ClientLeft      =   1095
   ClientTop       =   1515
   ClientWidth     =   6720
   ClipControls    =   0   'False
   ControlBox      =   0   'False
   Height          =   4635
   Left            =   1035
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   ScaleHeight     =   4230
   ScaleWidth      =   6720
   Top             =   1170
   Width           =   6840
   WindowState     =   2  'Maximized
   Begin VB.CommandButton Command6
      Caption         =   "&Change a Password"
      Height          =   615
      Left            =   7200
      TabIndex        =   12
      Top             =   2280
      Width           =   1575
   End

   Begin VB.Frame Frame3
      Caption         =   "Access Level"
      Height          =   255
      Left            =   4080
      TabIndex        =   11
      Top             =   4200
      Visible         =   0   'False
      Width           =   1335
   End

   Begin VB.TextBox Text3
      Height          =   375
      Left            =   4080
      TabIndex        =   6
      Top             =   4440
      Visible         =   0   'False
      Width           =   1335
   End

   Begin VB.CommandButton Command5
      Cancel          =   -1  'True
      Caption         =   "&Cancel"
      Height          =   615
      Left            =   2880
      TabIndex        =   10
      Top             =   6000
      Visible         =   0   'False
      Width           =   1575
   End

   Begin VB.CommandButton Command4
      Caption         =   "&OK"
      Height          =   615
      Left            =   960
      TabIndex        =   9
      Top             =   6000
      Visible         =   0   'False
      Width           =   1575
   End
   Begin VB.Frame Frame2
      Caption         =   "New User's Name"
      Height          =   255
      Left            =   480
      TabIndex        =   8
      Top             =   4560
      Visible         =   0   'False
      Width           =   1815
   End
   Begin VB.Frame Frame1
      Caption         =   "New User's Password"
      Height          =   255
      Left            =   480
      TabIndex        =   7
      Top             =   3840
      Visible         =   0   'False
      Width           =   1815
   End
   Begin VB.TextBox Text2
      Height          =   375
      Left            =   480
      TabIndex        =   5
      Top             =   4800
      Visible         =   0   'False
      Width           =   3255
   End
   Begin VB.TextBox Text1
      Height          =   375
      Left            =   480
      TabIndex        =   4
      Top             =   4080
      Visible         =   0   'False
      Width           =   3255
   End
   Begin VB.CommandButton Command3
      Caption         =   "&Delete a User"
      Height          =   615
      Left            =   7200
      TabIndex        =   3
      Top             =   1440
      Width           =   1575
   End
   Begin VB.CommandButton Command2
      Caption         =   "&Add a User"
      Height          =   615
      Left            =   7200
      TabIndex        =   1
      Top             =   600
      Width           =   1575
   End

   Begin VB.CommandButton Command1
      Caption         =   "E&xit"
      Height          =   615
      Left            =   7080
      TabIndex        =   0
      Top             =   5880
      Width           =   1575
   End

   Begin VB.ListBox List1
      BeginProperty Font
         name            =   "Courier"
         charset         =   1
         weight          =   400
         size            =   9.75
         underline       =   0   'False
         italic          =   0   'False
         strikethrough   =   0   'False
      EndProperty
      Height          =   3540
      Left            =   120
      TabIndex        =   2
      Top             =   120
      Width           =   6015
   End
End
Attribute VB_Name = "PWord"
Attribute VB_Creatable = False
Attribute VB_Exposed = False
Option Explicit

Dim MyDb As Database
Dim MyTableDef As Table
Dim RecruitersAccessLevel As Integer
Dim Task As Integer
Dim TempSSN As String
Dim TempAccessLevel As Integer


Sub AddPassword()
'This routine will add a password to the SECURITY database.
   Dim X As Integer
   On Local Error GoTo DuplicateError

   X = InStr(1, Text1.Text, "Complete:", 1)
   If X = 0 Then
      X = InStr(1, Text2.Text, "Complete:", 1)
   End If
   If X <> 0 Then
      MsgBox "The reserved word 'Complete:' cannot be used in the password
system."
      Exit Sub
   End If
   MyTableDef.AddNew
   MyTableDef("SSN") = LTrim(RTrim(Text1.Text))
   MyTableDef("Name") = LTrim(RTrim(Text2.Text))
   MyTableDef("AccessLevel") = AccessLevel
   MyTableDef.Update
   Call ReadFile
   Exit Sub
```

```
DuplicateError:
   MsgBox "Error writing password.  Check the password is not a duplicate."
   Exit Sub
End Sub

Sub ChangePassword()
'This routine will change a password.  The correct record is located
'and the password is changed.
   Dim Temp As String
   Dim X As Integer

   On Local Error GoTo DuplicateFound

   MyTableDef.Index = "SSNIndex"
   MyTableDef.MoveFirst
   For X = 0 To List1.ListCount - 1
      If List1.Selected(X) Then
         MyTableDef.Edit
         MyTableDef("SSN") = Text2.Text
         MyTableDef.Update
         X = List1.ListCount
      End If
      MyTableDef.MoveNext
    Next X
    MyTableDef.MoveFirst
    Call ReadFile
    MsgBox "Password Changed"
    Exit Sub

DuplicateFound:
   MsgBox "Another user has this password.  Passwords cannot be duplicated."
   Exit Sub
End Sub

Sub DeleteRecord()
'This routine will remove a password from the SECURITY database.
   Dim Temp As String
   Dim X As Integer
   Dim Count As Integer

   Count = 0
   MyTableDef.Index = "SSNIndex"
   MyTableDef.MoveFirst
   For X = 0 To List1.ListCount - 1
      If List1.Selected(X) Then
         If List1.ListCount < 2 Then
            MsgBox "Cannot delete all the passwords.  Must have one to log
in."
         Else
            If MyTableDef("Name") = DefaultName Then
               MsgBox "Cannot delete the System Manager"
            Else
               MyTableDef.Delete
               Count = Count + 1
            End If
         End If
      End If
      MyTableDef.MoveNext
    Next X
    MyTableDef.MoveFirst
    Call ReadFile
    MsgBox Str$(Count) & " password(s) deleted"
End Sub


Sub GetTheRecord()
'A specific record will be located by determining if it has been selected
'by the user.  If it has been selected, the SSN and the Access level are
'captured from the SECURITY database.
   Dim Temp As String
   Dim X As Integer

   MyTableDef.Index = "SSNIndex"
   MyTableDef.MoveFirst
   For X = 0 To List1.ListCount - 1
      If List1.Selected(X) Then
         TempSSN = MyTableDef("SSN")
         TempAccessLevel = MyTableDef("AccessLevel")
         X = List1.ListCount
      End If
      MyTableDef.MoveNext
    Next X
    MyTableDef.MoveFirst
End Sub


Function Pad(Chars As String, Length As Integer) As String
'This routine will verify that a string has exactly the number
'of characters specified by the parameter 'Length'.
   Chars = LTrim(RTrim(Chars))
   If Len(Chars) > Length Then
      Chars = Left$(Chars, Length)
   ElseIf Len(Chars) <> Length Then
      While Len(Chars) < Length
         Chars = Chars & " "
      Wend
   End If
   Pad = Chars
End Function

Sub ReadFile()
'The SECURITY database is read and the records are placed into the
'form's List Box.
   Dim Temp As String

   Set MyDb = OpenDatabase(SecurityFileName)
   Set MyTableDef = MyDb.OpenTable("Security")

   List1.Clear
   MyTableDef.Index = "SSNIndex"
   MyTableDef.MoveFirst
   While Not MyTableDef.EOF
       Temp = Pad(MyTableDef("Name"), 30) & " "
       Temp = Temp & "Level: " & Str$(MyTableDef("AccessLevel"))
       List1.AddItem Temp
       MyTableDef.MoveNext
    Wend
    List1.ListIndex = -1
End Sub


Private Sub Command1_Click()
   Unload PWord
```

```
End Sub


Private Sub Command2_Click()
   Text1.Text = ""
   Text2.Text = ""
   text3.Text = ""
   Command1.Visible = False
   Command2.Enabled = False
   Command3.Enabled = False
   Command6.Enabled = False
   Text1.Visible = True
   Text2.Visible = True
   text3.Visible = True
   Frame1.Visible = True
   Frame2.Visible = True
   Frame3.Visible = True
   Command4.Visible = True
   Command5.Visible = True
   'Command4.Enabled = False
   Text1.SetFocus
End Sub

Private Sub Command3_Click()
   If List1.ListCount < 1 Then
      MsgBox "There are no passwords to delete in the file."
      Exit Sub
   End If
   If List1.ListIndex < 0 Then
      MsgBox "You must select a user's name from the list."
      Exit Sub
   End If
   Call DeleteRecord
End Sub

Private Sub Command4_Click()
   Text1.Text = LTrim(RTrim(Text1.Text))
   Text2.Text = LTrim(RTrim(Text2.Text))
   text3.Text = LTrim(RTrim(text3.Text))

   If Task = 0 Then
      If Text1.Text = "" Then
         MsgBox "You must enter a password."
         Text1.SetFocus
         Exit Sub
      End If
      If Text2.Text = "" Then
         MsgBox "You must enter a name."
         Text2.SetFocus
         Exit Sub
      End If
      If text3.Text = "" Then
         MsgBox "You must enter an access level"
         text3.SetFocus
         Exit Sub
      End If
      AccessLevel = Val(text3.Text)
      If AccessLevel < 1 And AccessLevel > 3 Then
         MsgBox "Access Level number must be between 1 and 3."
         Exit Sub
      End If
      If RecruitersAccessLevel <> 4 Then
         If RecruitersAccessLevel <= Val(text3.Text) Then
            MsgBox "You can only administer passwords below your access
level."
            Exit Sub
         End If
      End If
      Call AddPassword
   Else
      If Text1.Text = "" Then
         MsgBox "You must enter the old password."
         Text1.SetFocus
         Exit Sub
      End If
      If Text2.Text = "" Then
         MsgBox "You must enter a new password."
         Text2.SetFocus
         Exit Sub
      End If
      Call GetTheRecord
      If RecruitersAccessLevel < TempAccessLevel Then
         MsgBox "You can only change a password below or equal to your access
level."
         Exit Sub
      End If
      If Text1.Text <> TempSSN Then
         MsgBox "The old password does not match.  Please enter the old
password again."
         Text1.SetFocus
         Exit Sub
      End If
      If Text1.Text = Text2.Text Then
         MsgBox "The new password must be different from the old password."
         Text2.SetFocus
         Exit Sub
      End If
      'If Not CheckNewSSN(Text2.Text) Then
      '   MsgBox "The new password is not formatted correctly."
      '   Text2.SetFocus
      '   Exit Sub
      'End If
      Call ChangePassword
   End If
   Text1.Visible = False
   Text2.Visible = False
   text3.Visible = False
   Frame1.Visible = False
   Frame2.Visible = False
   Frame3.Visible = False
   Frame1.Caption = "New User's Password"
   Frame2.Caption = "New User's Name"
   Command1.Visible = True
   Command4.Visible = False
   Command5.Visible = False
   Command2.Enabled = True
   Command3.Enabled = True
   Command6.Enabled = True
   Task = 0
End Sub


Private Sub Command5_Click()
```

```
   Task = 0
   Text1.Visible = False
   Text2.Visible = False
   text3.Visible = False
   Frame1.Visible = False
   Frame2.Visible = False
   Frame3.Visible = False
   Frame1.Caption = "New User's Password"
   Frame2.Caption = "New User's Name"
   Command1.Visible = True
   Command4.Visible = False
   Command5.Visible = False
   Command2.Enabled = True
   Command3.Enabled = True
   Command6.Enabled = True
End Sub

Private Sub Command6_Click()
   If List1.ListIndex < 0 Then
      MsgBox "You must select a user's name from the list."
      Exit Sub
   End If
   Text1.Text = ""
   Text2.Text = ""
   Command1.Visible = False
   Command2.Enabled = False
   Command3.Enabled = False
   Command6.Enabled = False
   Text1.Visible = True
   Text2.Visible = True
   Frame1.Caption = "Old Password"
   Frame2.Caption = "New Password"
   Frame1.Visible = True
   Frame2.Visible = True
   Command4.Visible = True
   Command5.Visible = True
   Task = 1
   Text1.SetFocus
End Sub

Private Sub Form_Load()
   RecruitersAccessLevel = AccessLevel
   Task = 0
   Call ReadFile
End Sub



Private Sub Form_Unload(Cancel As Integer)
   AccessLevel = RecruitersAccessLevel
   MyTableDef.Close
End Sub


Private Sub List1_DblClick()
   If Task <> 0 Then
      Call GetTheRecord
   End If
End Sub
```

```
Private Sub Text1_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      KeyAscii = 0
      Text2.SetFocus
   End If
End Sub

Private Sub Text2_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      KeyAscii = 0
      If text3.Visible Then
         text3.SetFocus
      Else
         Call Command4_Click
      End If
   End If
End Sub

Private Sub text3_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      KeyAscii = 0
      Call Command4_Click
   End If
End Sub
```

SAMPLES.FRM

```
VERSION 4.00
Begin VB.Form Samples
   ClientHeight    =   4230
   ClientLeft      =   1095
   ClientTop       =   1515
   ClientWidth     =   6720
   ClipControls    =   0   'False
   ControlBox      =   0   'False
   Height          =   4635
   Left            =   1035
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   ScaleHeight     =   4230
   ScaleWidth      =   6720
   Top             =   1170
   Width           =   6840
   WindowState     =   2  'Maximized
   Begin VB.CommandButton Command1
      Caption         =   "Command1"
      Height          =   495
      Left            =   4200
      TabIndex        =   0
      Top             =   6240
      Width           =   1455
   End
End
Attribute VB_Name = "Samples"
Attribute VB_Creatable = False
Attribute VB_Exposed = False
Option Explicit

Dim TestID As Integer
Dim ItemBuffer As String
Dim Answer As Integer
Dim OldPointer As Integer
Dim Pointer As Integer

Private Sub Command1_Click()
   Unload Samples
End Sub

Private Sub Form_Activate()
   TestID = Val(SendString)
   If TestID = AR Then
      TestID = INTRO
      Call LoadItem(102, 0)
   Else
      TestID = INTRO
      Call LoadItem(101, 0)
   End If
   Call ShowItem
End Sub

Private Sub ShowItem()
'This routine uses the previously loaded buffer to display the item
'on the screen.
   Dim Z, HTab, VTab, Ptr As Integer
   Dim Finished, Distractor As Integer
   Dim Char As String * 1
   Dim Temp As String
   Dim VTabStart, HTabStart As Integer

   VTabStart = 50 * Screen.TwipsPerPixelY
   HTabStart = 5 * Screen.TwipsPerPixelX
   Samples.Cls
   Finished = False
   Distractor = 0
   HTab = HTabStart: VTab = VTabStart
   Samples.CurrentX = HTab * Screen.TwipsPerPixelX
   Samples.CurrentY = VTab
   Ptr = 1
   While Not Finished
      Char = Mid$(ItemBuffer, Ptr, 1)
      Ptr = Ptr + 1
      If Char = Chr$(0) Then
         Distractor = Distractor + 1
         HTab = HTabStart
         VTab = VTab + (TextHeight("A") * 2)
         Samples.CurrentX = HTab * Screen.TwipsPerPixelX
         Samples.CurrentY = VTab
         Samples.Print Chr$(64 + Distractor); ".  ";
      ElseIf Char > Chr$(0) And Char < Chr$(9) Then
         Answer = Asc(Char)
         Finished = True
      ElseIf Char = Chr$(13) Then
         HTab = HTabStart
         VTab = VTab + TextHeight("A")
         Samples.CurrentX = HTab * Screen.TwipsPerPixelX
         Samples.CurrentY = VTab
      Else
         If Char = Chr$(InverseOn) Then
            Samples.FontUnderline = True
            Samples.ForeColor = QBColor(DColor)
            Temp = ""
            While Char <> Chr$(InverseOff)
               Char = Mid$(ItemBuffer, Ptr, 1)
               Ptr = Ptr + 1
               If Char <> Chr$(InverseOff) Then
                  Samples.Print Char;
               End If
            Wend
            Samples.FontUnderline = False
            Samples.ForeColor = FColor
         Else
            Samples.Print Char;
         End If
      End If
   Wend
   OldPointer = 0
   Pointer = 0
End Sub


Private Sub LoadItem(RecordNumber As Integer, Offset)
'This routine loads a sample item into a buffer
   Dim Finished, X, Y, Z, DisFound As Integer
   Dim Distractor As Integer
   Dim EndFound As Integer
   Dim Char As String * 1
   Dim Temp, Junk As String
```

```
    Finished = False
    DisFound = False
    ItemBuffer = ""
    Junk = ""

    CastTable.Seek "=", RecordNumber '+ (Offset * 1000)
    If Not CastTable.NoMatch Then
       Temp = CastTable("TextInfo")
       X = Len(Temp)
       Distractor = 0
       EndFound = False
       For Z = 1 To X
          Char = Mid$(Temp, Z, 1)
          Select Case Char
             Case Chr$(13):
                If DisFound Then
                   If TestID = AR Then
                      Distractor = Distractor + 1
                      If Distractor = MaxDistractors + 2 Then
                         EndFound = True
                      End If
                   Else
                      If Len(LTrim(RTrim(Junk))) = 1 And Val(Junk) > 0 And
Val(Junk) < 9 Then
                         EndFound = True
                      End If
                   End If
                   If EndFound Then
                      For Y = Len(ItemBuffer) To 1 Step -1
                         If Mid$(ItemBuffer, Y, 1) = Chr$(0) Then
                            ItemBuffer = Left$(ItemBuffer, Y - 1)
                            ItemBuffer = ItemBuffer & Chr$(Val(Junk))
                            Y = 0
                         End If
                      Next Y
                      Z = X + 1
                   Else
                      ItemBuffer = ItemBuffer & Chr$(0)
                      Junk = ""
                   End If
                Else
                   ItemBuffer = ItemBuffer & Chr$(13)
                End If
             Case Chr$(10):
             Case "!":
                DisFound = True
             Case "|":
                DisFound = True
             Case Else
                ItemBuffer = ItemBuffer & Char
                If DisFound Then
                   Junk = Junk & Char
                End If
          End Select
       Next Z
    End If
End Sub

Private Sub Form_Load()
    Samples.FontSize = ItemFontSize
End Sub
```

SECURITY.FRM

```
VERSION 4.00
Begin VB.Form Security
   AutoRedraw      =   -1  'True
   BackColor       =   &H00FFFFFF&
   Caption         =   "Test Management"
   ClientHeight    =   4230
   ClientLeft      =   1095
   ClientTop       =   1800
   ClientWidth     =   6720
   ClipControls    =   0   'False
   ControlBox      =   0   'False
   Height          =   4920
   Left            =   1035
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   NegotiateMenus  =   0   'False
   ScaleHeight     =   4230
   ScaleWidth      =   6720
   Top             =   1170
   Width           =   6840
   WindowState     =   2  'Maximized
   Begin VB.OptionButton Option1
      Caption         =   "Print"
      Height          =   495
      Index           =   1
      Left            =   2760
      TabIndex        =   14
      Top             =   4560
      Visible         =   0   'False
      Width           =   1695
   End

   Begin VB.CommandButton Command2
      Caption         =   "&Cancel"
      Height          =   495
      Left            =   5640
      TabIndex        =   10
      Top             =   5880
      Width           =   1455
   End

   Begin VB.CommandButton Command1
      Caption         =   "&OK"
      Default         =   -1  'True
      Height          =   495
      Left            =   2640
      TabIndex        =   9
      Top             =   5880
      Width           =   1455
   End

   Begin VB.Frame Frame1
      Height          =   6615
      Left            =   120
      TabIndex        =   6
      Top             =   0
      Visible         =   0   'False
      Width           =   9615
      Begin VB.Frame Frame3
      Caption          =   $"SECURITY.frx":0000
      BeginProperty Font
         name             =   "MS Sans Serif"
         charset          =   1
         weight           =   400
         size             =   9.75
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      Height          =   255
      Left            =   2400
      TabIndex        =   15
      Top             =   480
      Visible         =   0   'False
      Width           =   6975
   End
   Begin VB.Frame Frame2
      Caption         =   "Print Options"
      Height          =   2175
      Left            =   2400
      TabIndex        =   12
      Top             =   3240
      Visible         =   0   'False
      Width           =   2295
      Begin VB.OptionButton Option1
         Caption         =   "Print Preview"
         Height          =   495
         Index           =   0
         Left            =   240
         TabIndex        =   13
         Top             =   600
         Value           =   -1  'True
         Visible         =   0   'False
         Width           =   1695
      End
   End
   Begin VB.TextBox ViewScores
      BeginProperty Font
         name             =   "Courier"
         charset          =   1
         weight           =   400
         size             =   9.75
         underline        =   0   'False
         italic           =   0   'False
         strikethrough    =   0   'False
      EndProperty
      Height          =   4695
      Left            =   2640
      Locked          =   -1  'True
      MultiLine       =   -1  'True
      ScrollBars      =   2  'Vertical
      TabIndex        =   11
      Top             =   1080
      Visible         =   0   'False
      Width           =   6735
   End
   Begin VB.ListBox List1
      Height          =   4155
      Left            =   4920
      TabIndex        =   7
      Top             =   1560
```

```
         Visible         =   0   'False
         Width           =   2655
      End
      Begin VB.Label Label2
         BeginProperty Font
            name            =   "MS Sans Serif"
            charset         =   1
            weight          =   700
            size            =   12
            underline       =   0   'False
            italic          =   0   'False
            strikethrough   =   0   'False
         EndProperty
         Height          =   3855
         Left            =   360
         TabIndex        =   8
         Top             =   1560
         Visible         =   0   'False
         Width           =   2175
      End
   End

   Begin VB.TextBox Text4
      BeginProperty Font
         name            =   "Times New Roman"
         charset         =   1
         weight          =   400
         size            =   12
         underline       =   0   'False
         italic          =   0   'False
         strikethrough   =   0   'False
      EndProperty
      Height          =   405
      Left            =   6840
      MaxLength       =   9
      TabIndex        =   3
      Text            =   "Text1"
      Top             =   5400
      Visible         =   0   'False
      Width           =   2055
   End

   Begin VB.TextBox Text3
      BeginProperty Font
         name            =   "Times New Roman"
         charset         =   1
         weight          =   400
         size            =   12
         underline       =   0   'False
         italic          =   0   'False
         strikethrough   =   0   'False
      EndProperty
      Height          =   405
      Left            =   6840
      TabIndex        =   2
      Text            =   "Text1"
      Top             =   4800
      Visible         =   0   'False
      Width           =   2055
   End

   Begin VB.TextBox Text2
```

```
      BeginProperty Font
         name              =   "Times New Roman"
         charset           =   1
         weight            =   400
         size              =   12
         underline         =   0   'False
         italic            =   0   'False
         strikethrough     =   0   'False
      EndProperty
      Height          =   405
      Left            =   6840
      TabIndex        =   1
      Text            =   "Text1"
      Top             =   4200
      Visible         =   0   'False
      Width           =   2055
   End

   Begin VB.PictureBox Picture1
      AutoRedraw      =   -1  'True
      BackColor       =   &H00FFFFFF&
      BorderStyle     =   0  'None
      BeginProperty Font
         name              =   "MS Sans Serif"
         charset           =   1
         weight            =   400
         size              =   12
         underline         =   0   'False
         italic            =   0   'False
         strikethrough     =   0   'False
      EndProperty
      Height          =   5895
      Left            =   1320
      ScaleHeight     =   5895
      ScaleWidth      =   6735
      TabIndex        =   4
      Top             =   0
      Width           =   6735
      Begin VB.TextBox Text1
         BeginProperty Font
            name              =   "Times New Roman"
            charset           =   1
            weight            =   400
            size              =   12
            underline         =   0   'False
            italic            =   0   'False
            strikethrough     =   0   'False
         EndProperty
         Height          =   405
         Left            =   1800
         PasswordChar    =   "*"
         TabIndex        =   0
         Text            =   "Text1"
         Top             =   4680
         Width           =   3735
      End
   End

   Begin VB.Label Label1
      BackColor       =   &H00FFFFFF&
      Caption         =   "One moment please..."
      BeginProperty Font
```

```
         name              =   "Times New Roman"
         charset           =   1
         weight            =   400
         size              =   12
         underline         =   0   'False
         italic            =   0   'False
         strikethrough     =   0   'False
      EndProperty
      Height          =   375
      Left            =   3840
      TabIndex        =   5
      Top             =   5280
      Visible         =   0   'False
      Width           =   2655
   End
   Begin VB.Menu File
      Caption         =   "&File"
      Begin VB.Menu GoPrint
         Caption         =   "&Print"
      End
      Begin VB.Menu Exit
         Caption         =   "E&xit"
      End
   End
   Begin VB.Menu Test
      Caption         =   "&Test"
      Begin VB.Menu Register
         Caption         =   "&Give a Test"
      End
      Begin VB.Menu GiveTest
         Caption         =   "&Finish an Incomplete Test"
      End
      Begin VB.Menu View
         Caption         =   "&View Test Scores"
      End
   End
   Begin VB.Menu Maintenance
      Caption         =   "&Maintenance"
      Begin VB.Menu Passwords
         Caption         =   "&Passwords"
      End
      Begin VB.Menu Utilities
         Caption         =   "File &Utilities"
      End
   End
   Begin VB.Menu GoHelp
      Caption         =   "&Help"
      Begin VB.Menu Contents
         Caption         =   "&Contents"
         Begin VB.Menu HelpFile
            Caption         =   "&File"
            Begin VB.Menu HelpContentsPrintingScores
               Caption         =   "&Printing Scores"
            End
         End
         Begin VB.Menu HelpTest
            Caption         =   "&Test"
            Begin VB.Menu HelpTestRegister
```

```
                    Caption         =   "&Give a Test"
                 End
                 Begin VB.Menu HelpTestGive
                    Caption         =   "&Finish an Incomplete Test"
                 End
                 Begin VB.Menu HelpTestView
                    Caption         =   "&View Test Results"
                 End
              End
              Begin VB.Menu HelpMaintenance
                 Caption         =   "&Maintenance"
                 Begin VB.Menu HelpMaintenancePassword
                    Caption         =   "&Password Maintenance"
                 End
                 Begin VB.Menu HelpMaintenanceUtilities
                    Caption         =   "&File Utilities"
                 End
              End
           End
           Begin VB.Menu CastAbout
              Caption         =   "&About Cast"
           End
        End
     End
     Attribute VB_Name = "Security"
     Attribute VB_Creatable = False
     Attribute VB_Exposed = False
     Option Explicit

     Dim MyDb As Database
     Dim MyTableDef As Table
     Dim Task As Integer
     Dim FileIndex(1 To 5000) As Integer

     Function CheckSSN() As Integer
     'This routine is used to determine if the SSN is valid (in format).
        Dim X As Integer
        Dim Result As Integer

        Result = True
        If Len(SSN) <> 9 Then
           Result = False
        Else
           For X = 1 To Len(SSN)
              If Mid$(SSN, X, 1) < Chr$(48) Or Mid$(SSN, X, 1) > Chr$(57) Then
                 Result = False
                 X = Len(SSN)
              End If
           Next X
        End If
        CheckSSN = Result
     End Function


     Sub GetRecordData(TestDate As String)
     'This routine fetches a record from the EXAMINEE database and returns the
     'test date.  This test date is used to determine if this particular
     'test administration should be resumed.
         Dim X As Integer
         Dim Y As Integer
         Dim TestInfo As String
```

```
      Y = FileIndex(List1.ListIndex + 1)
      ExamineeTable.Index = "SSNPrimary"
      ExamineeTable.MoveFirst
      For X = 1 To Y - 1
         ExamineeTable.MoveNext
      Next X
      Last = ExamineeTable("LastName")
      First = ExamineeTable("FirstName")
      RecruiterSSN = ExamineeTable("RecruiterSSN")
      SSN = ExamineeTable("SSN")
      TestInfo = ExamineeTable("TestInfo")
      X = InStr(1, TestInfo, "Instruction Sequence Begin:", 1)
      If X = 0 Then
         TestDate = ""
      Else
         TestDate = Mid$(TestInfo, X + 27, 10)
      End If
End Sub

Function GetRestart() As Integer
'This routine is used to find a record in the EXAMINEE database that
'matches the last name, first name, and SSN that was entered by the
'recruiter.  A check is also made to determine if this test administration
'has already been completed.
   Dim Found As Integer
   Dim X As Integer

   On Local Error GoTo FileEmpty
   GetRestart = False
   ExamineeTable.MoveFirst
   Found = False
   While Not Found And Not ExamineeTable.EOF
      If ExamineeTable("CompleteFlag") <> True Then
         If ExamineeTable("LastName") = Last Then
            If ExamineeTable("FirstName") = First Then
               If ExamineeTable("SSN") = SSN Then
                  OutputString = ExamineeTable("TestInfo")
                  Found = True
               End If
            End If
         End If
      End If
      If Found Then
         X = InStr(1, OutputString, "Begin", 1)
         If X <> 0 Then
            GetRestart = True
         End If
      Else
         ExamineeTable.MoveNext
      End If
   Wend
   Exit Function

FileEmpty:
   Exit Function
End Function



Sub GetTestScores(Value As Integer)
'This routine captures data from a specific examinee's test and extracts
'the test scores and places these test scores in variables.
```

```
    Dim X As Integer
    Dim Y As Integer
    Dim TestInfo As String
    Dim SaveTestInfo As String
    Dim Result As String

    Y = FileIndex(List1.ListIndex + 1)
    ExamineeTable.Index = "SSNPrimary"
    ExamineeTable.MoveFirst
    For X = 1 To Y - 1
       ExamineeTable.MoveNext
    Next X
    Last = ExamineeTable("LastName")
    First = ExamineeTable("FirstName")
    SSN = ExamineeTable("SSN")
    TestInfo = ExamineeTable("TestInfo")
    SaveTestInfo = TestInfo
    X = InStr(1, TestInfo, "Complete:", 1)
    If X = 0 Then
       MsgBox "The test for " & ExamineeTable("LastName") & ", " &
ExamineeTable("FirstName") & " has not been completed yet.  Cannot print until
the test is complete."
       Exit Sub
    End If
    Result = ""
    While InStr(1, Result, "Complete:", 1) = 0
       Call ParseString(TestInfo, Result)
    Wend
    Call ParseString(TestInfo, Result)
    For Y = 1 To 5
       X = InStr(Result, ",")
       If X <> 0 Then
          Select Case Y
             Case 1:
                AFQT = Val(Left$(Result, X - 1))
             Case 2:
                AWK = Val(Left$(Result, X - 1))
             Case 3:
                AAR = Val(Left$(Result, X - 1))
             Case 4:
                P1 = Val(Left$(Result, X - 1))
             Case 5:
                P2 = Val(Left$(Result, X - 1))
          End Select
          Result = Right$(Result, Len(Result) - X)
       End If
    Next Y
    P3 = Val(Left$(Result, X - 1))
    Call GetPerformance(SaveTestInfo)
    If Value = 0 Then
       Value = 2
    End If
    'SendString = "1"
    'Feedback.Show MODAL
    SendString = LTrim(RTrim(Str$(Value)))
    Feedback.Show MODAL
End Sub

Sub GoRegister()
'This routine adds a new record to the EXAMINEE database.  Included in this
'record are the examinee's name and SSN, the recruiter's SSN, and the
'complete flag is set to FALSE.
```

```
   Dim X As Integer
   X = InStr(1, Last, "Complete:", 1)
   If X = 0 Then
      X = InStr(1, First, "Complete:", 1)
      If X = 0 Then
         X = InStr(1, RecruiterSSN, "Complete:", 1)
         If X = 0 Then
            X = InStr(1, SSN, "Complete:", 1)
         End If
      End If
   End If
   If X <> 0 Then
      MsgBox "The reserved word 'Complete:' cannot be used to register an
examinee."
      Exit Sub
   End If
   ExamineeTable.AddNew
   ExamineeTable("LastName") = RTrim(LTrim(Left$(Last, 25)))
   ExamineeTable("FirstName") = RTrim(LTrim(Left$(First, 25)))
   ExamineeTable("RecruiterSSN") = RTrim(LTrim(Left$(RecruiterSSN, 11)))
   ExamineeTable("CompleteFlag") = False
   ExamineeTable("SSN") = LTrim(RTrim(Left$(SSN, 12)))
   ExamineeTable("TestInfo") = OutputString
   ExamineeTable.Update
End Sub

Sub LoadTable(Complete As Integer)
'This routine will locate examinee's who have started the test today, and
'who may be avaliable to complete their test.
    Dim X As Integer
    Dim Y As Integer
    Dim Ptr As Integer
    Dim Temp As String
    Dim TestInfo As String
    Dim TestDate As String
    Dim Found As Integer

    On Local Error GoTo FileEmpty
    X = 0
    Ptr = 0
    List1.Clear
    ExamineeTable.Index = "SSNPrimary"
    ExamineeTable.MoveFirst
    While Not ExamineeTable.EOF
       Ptr = Ptr + 1
       If ExamineeTable("CompleteFlag") = Complete Then
          Found = True
          If Complete = False Then
             TestInfo = ExamineeTable("TestInfo")
             Y = InStr(1, TestInfo, "Instruction Sequence Begin:", 1)
             If Y <> 0 Then
                TestDate = Mid$(TestInfo, Y + 27, 10)
                If TestDate <> Date$ Then
                   Found = False
                End If
             End If
          End If
          If Found Then
             Temp = ExamineeTable("SSN") & ": " & ExamineeTable("LastName") &
", " & ExamineeTable("FirstName")
             List1.AddItem Temp
             X = X + 1
```

```
                FileIndex(X) = Ptr
             End If
          End If
          ExamineeTable.MoveNext
       Wend
       List1.Visible = True
       ExamineeTable.MoveFirst
       Exit Sub

FileEmpty:
   Exit Sub
End Sub

Sub Pad()
'This pad routine insures the SSN, last name, and first name all of
'the correct number of characters.
   SSN = LTrim(RTrim(SSN))
   SSN = Left$(SSN, 11)
   While Len(SSN) < 11
      SSN = SSN & " "
   Wend

   Last = LTrim(RTrim(Last))
   Last = Left$(Last, 15)
   While Len(Last) < 15
      Last = Last & " "
   Wend

   First = LTrim(RTrim(First))
   First = Left$(First, 10)
   While Len(First) < 10
      First = First & " "
   Wend
End Sub

Sub PrintLine(X As Integer, Y As Integer, Chars As String)
'The PrintLine subroutine is just a shorthand way of writing
'characters to a specific location on the screen.
   Picture1.CurrentX = X
   Picture1.CurrentY = Y
   Picture1.Print Chars
End Sub

Sub ViewTestScores()
'This routine displays all of the 'completed' tests on the screen.
    Dim X As Integer
    Dim Y As Integer
    Dim Temp As String
    Dim TestInfo As String
    Dim Result As String
    Dim TestDate As String

    Const MaxElement = 500
    Dim Array(MaxElement) As String
    Dim Point As Integer

    On Local Error GoTo FileEmpty

    Point = 0
    Frame3.Visible = True
    TEST.Enabled = False
    Maintenance.Enabled = False
    GoPrint.Enabled = False
    Frame1.Visible = True
    Label2.Caption = "On the right is the list of examinees with completed
tests."
    Label2.Visible = True
    X = 0
    ViewScores.Text = ""
    ExamineeTable.Index = "SSNPrimary"
    ExamineeTable.MoveFirst
    While Not ExamineeTable.EOF
       If ExamineeTable("CompleteFlag") Then
          X = X + 1
          Last = ExamineeTable("LastName")
          First = ExamineeTable("FirstName")
          SSN = ExamineeTable("SSN")
          TestInfo = ExamineeTable("TestInfo")
          X = InStr(1, TestInfo, "Complete:", 1)
          If X = 0 Then
             AFQT = 0
             P1 = 0
             P2 = 0
             P3 = 0
             AWK = 0
             AAR = 0
             TestDate = ""
          Else
             Result = ""
             X = InStr(1, TestInfo, "Instruction Sequence Begin:", 1)
             If X = 0 Then
                TestDate = ""
             Else
                TestDate = Mid$(TestInfo, X + 27, 10)
             End If
             While InStr(1, Result, "Complete:", 1) = 0
                Call ParseString(TestInfo, Result)
             Wend
             Call ParseString(TestInfo, Result)
             For Y = 1 To 5
                X = InStr(Result, ",")
                If X <> 0 Then
                   Select Case Y
                      Case 1:
                         AFQT = Val(Left$(Result, X - 1))
                      Case 2:
                         AWK = Val(Left$(Result, X - 1))
                      Case 3:
                         AAR = Val(Left$(Result, X - 1))
                      'Case 4:
                         'P1 = Val(Left$(Result, X - 1))
                      'Case 5:
                         'P2 = Val(Left$(Result, X - 1))
                   End Select
                   Result = Right$(Result, Len(Result) - X)
                End If
             Next Y
             'P3 = Val(Left$(Result, X - 1))
             Call Pad
             Point = Point + 1
             If Point <= MaxElement Then
                Array(Point) = Last & ", " & First & " " & Right$(TestDate, 4)
& " " & Left$(TestDate, 5) & "  "
                Array(Point) = Array(Point) & Left$(SSN, 4) & "   " &
```

```
Format$(AFQT, "00") & " " & Format$(AWK, "00") & " " & Format$(AAR, "00") &
CRLF
                'Array(Point) = Last & ", " & First & " " & TestDate & " " &
Left$(SSN, 4) & "  " & Format$(AFQT, "00") & " " & Format$(AWK, "00") & " " &
Format$(AAR, "00") & CRLF
             End If
             'ViewScores.Text = ViewScores.Text & Last & ", " & First & " " &
TestDate & " " & Left$(SSN, 4) & "  " & Format$(AFQT, "00") & " " &
Format$(AWK, "00") & " " & Format$(AAR, "00") & CRLF
          End If
       End If
       ExamineeTable.MoveNext
    Wend
    Call QSort(Array(), Point)
    For Y = 1 To Point
       ViewScores.Text = ViewScores.Text & Array(Y)
    Next Y
    ViewScores.Visible = True
    Task = 4
    'Command1.Caption = "&Print this screen"
    Command2.Caption = "&Close"
    'Command1.Left = 4200
    Command2.Left = 7440
    'Command1.Visible = True
    Command2.DEFAULT = True
    Command2.Visible = True
    Exit Sub

FileEmpty:
    Task = 4
    MsgBox "There are no examinee records on file."
    Call Command2_Click
    Exit Sub
End Sub


Private Sub CastAbout_Click()
   About.Show MODAL
End Sub


Private Sub Command1_Click()
    Dim Success As Integer
    Dim TestDate As String

   Command1.DEFAULT = True

    Select Case Task
       Case 0:
          Set MyDb = OpenDatabase(SecurityFileName)
          Set MyTableDef = MyDb.OpenTable("Security")

          RecruiterSSN = LTrim(RTrim(Text1.Text))
          If RecruiterSSN = "" Then
             MsgBox "You must enter your Password."
             MyTableDef.Close
             Exit Sub
          'ElseIf Len(RecruiterSSN) <> 9 Then
          '   MsgBox "Invalid Password.  Please try again."
          '   MyTableDef.Close
          '   Exit Sub
          End If
          MyTableDef.Index = "SSNIndex"
          MyTableDef.Seek "=", RecruiterSSN
          If MyTableDef.NoMatch Then
             MsgBox "Cannot Find: " & Text1.Text & ".  Please try again."
             MyTableDef.Close
             Exit Sub
          Else
             RecruiterName = LTrim(RTrim(MyTableDef("Name")))
             AccessLevel = MyTableDef("AccessLevel")
          End If
          Text1.Text = ""
          Text1.Visible = False
          Command1.Visible = False
          Command2.Visible = False
          MyTableDef.Close
          TEST.Enabled = True
          Maintenance.Enabled = True
          GoPrint.Enabled = True
          Picture1.Cls
          Picture1.CurrentX = 300
          Picture1.CurrentY = 4300
          Picture1.Print "Welcome.  Please use the menu bar to select a
function."
       Case 1:
'MsgBox "Case 1"
          Command1.DEFAULT = False
          Command2.DEFAULT = False
          Success = False
          Last = LTrim(RTrim(Text2.Text))
          If Last = "" Then
'             MsgBox "You must enter examinee's last name.  Please try again."
             MsgBox "You must enter full name and SSN.  Please try again."
             Text2.SetFocus
             Exit Sub
          End If

          First = LTrim(RTrim(text3.Text))
          If First = "" Then
'             MsgBox "You must enter examinee's first name.  Please try
again."
             MsgBox "You must enter full name and SSN.  Please try again."
             text3.SetFocus
             Exit Sub
          End If

          SSN = LTrim(RTrim(Text4.Text))
          If SSN = "" Then
'             MsgBox "You must enter examinee's SSN.  Please try again."
              MsgBox "You must enter full name and SSN.  Please try again."
            Text4.SetFocus
             Exit Sub
          End If

          If Not CheckSSN() Then
             MsgBox "This is not a valid SSN format.  Please enter a correct
SSN."
             Text4.SetFocus
             Exit Sub
          End If

          Restart = GetRestart()
          If Restart Then
```

```
             MsgBox Last & ", " & First & " " & SSN & " is already registered
and has not completed the test."
          Else
             OutputString = Last & ", " & First & " " & SSN & CRLF
             OutputString = OutputString & RecruiterName & CRLF
             OutputString = OutputString & RecruiterSSN & CRLF
             Success = True
             Call GoRegister
          End If
          DoEvents
          Command1.Caption = "&OK"
          Text2.Text = ""
          text3.Text = ""
          Text4.Text = ""
          Text2.Visible = False
          text3.Visible = False
          Text4.Visible = False
          Command1.Visible = False
          Command2.Visible = False
          If Success Then
             Restart = GetRestart()
             If Restart Then
                If Not MsgBox("This test will be resumed for:  " & Chr$(10) &
Last & ", " & First & "." & Chr$(10) & Chr$(10) & "Is this correct?", vbYesNo
+ vbQuestion) = vbYes Then
                   Exit Sub
                End If
             End If
             SendString = ""
             Unload Security
             Exit Sub
          Else
             Picture1.Cls
             Picture1.CurrentX = 300
             Picture1.CurrentY = 4300
             Picture1.Print "Please use the menu bar to select a function."
          End If
       Case 2:
'MsgBox "Case 2"
          Command1.DEFAULT = False
          Command2.DEFAULT = False
          If List1.ListIndex < 0 Then
             MsgBox "You must select an examinee from the list before clicking
'OK'."
             Exit Sub
          End If
          Call GetRecordData(TestDate)
          'If TestDate <> "" Then
          '   If TestDate <> Date$ Then
          '      MsgBox "Test cannot be resumed if it was started on a
different date." & Chr$(10) & Chr$(10) & "Please start another test."
          '      Exit Sub
          '   End If
          'End If
          Restart = GetRestart()
          If Restart Then
             If Not MsgBox("This test will be resumed for:  " & Chr$(10) &
Last & ", " & First & "." & Chr$(10) & Chr$(10) & "Is this correct?", vbYesNo
+ vbQuestion) = vbYes Then
                Exit Sub
             End If
          End If
          SendString = ""
          Unload Security
       Case 3:
'MsgBox "Case 3"
          Command1.DEFAULT = False
          Command2.DEFAULT = False
          If List1.ListIndex < 0 Then
             MsgBox "You must select an examinee from the list before clicking
'OK'."
             Command2_Click
             Exit Sub
          End If
          Task = 5
          Frame2.Visible = True
          Option1(0).Visible = True
          Option1(0).Value = True
          Option1(1).Visible = True
          Option1(1).Value = False
          Option1(0).SetFocus
       Case 4:
 '      MsgBox "Case 4"
          Command1.Visible = False
          Command2.Visible = False
          Label2.Visible = False
          Security.PrintForm
          Label2.Visible = True
          Command1.Visible = True
          Command2.Visible = True
       Case 5:
'      MsgBox "Case 5"
          If Option1(0).Value Then
             Call GetTestScores(2)
          Else
             Call GetTestScores(3)
          End If
          Command1.Left = 2640
          Command2.Left = 5640
          Command1.Visible = False
          Command2.Visible = False
          Frame1.Visible = False
          List1.Visible = False
          TEST.Enabled = True
          Maintenance.Enabled = True
          GoPrint.Enabled = True
          Option1(0).Visible = False
          Option1(1).Visible = False
          Frame2.Visible = False
          Picture1.Cls
          Picture1.CurrentX = 300
          Picture1.CurrentY = 4300
          Picture1.Print "Please use the menu bar to select a function."
    End Select
End Sub

Private Sub Command2_Click()
    Picture1.Cls
    Select Case Task
       Case 0:
          SendString = "Quit"
          Unload Security
       Case 1:
          Text2.Text = ""
```

```
            text3.Text = ""
            Text4.Text = ""
            Text2.Visible = False
            text3.Visible = False
            Text4.Visible = False
            Command1.Visible = False
            Command2.Visible = False
            Command1.Caption = "&OK"
            Picture1.Cls
            Picture1.CurrentX = 300
            Picture1.CurrentY = 4300
            Picture1.Print "Please use the menu bar to select a function."
        Case 2, 3:
            Frame1.Visible = False
            Label2.Visible = False
            TEST.Enabled = True
            Maintenance.Enabled = True
            GoPrint.Enabled = True
            List1.Visible = False
            Command1.Left = 2640
            Command2.Left = 5640
            Command1.Visible = False
            Command2.Visible = False
            Picture1.Cls
            Picture1.CurrentX = 300
            Picture1.CurrentY = 4300
            Picture1.Print "Please use the menu bar to select a function."
            Option1(0).Visible = False
            Option1(1).Visible = False
            Frame2.Visible = False
        Case 4, 5:
            Frame3.Visible = False
            Command1.Visible = False
            Command2.Visible = False
            ViewScores.Visible = False
            Option1(0).Visible = False
            Option1(1).Visible = False
            Frame2.Visible = False
            Picture1.Cls
            Picture1.CurrentX = 300
            Picture1.CurrentY = 4300
            Picture1.Print "Please use the menu bar to select a function."
            Frame1.Visible = False
            Label2.Visible = False
            TEST.Enabled = True
            Maintenance.Enabled = True
            GoPrint.Enabled = True
            Command1.Caption = "&OK"
            Command2.Caption = "&Cancel"
            Command1.Left = 2640
            Command2.Left = 5640
    End Select
End Sub


Private Sub Exit_Click()
   SendString = "Quit"
   Unload Security
End Sub

Private Sub Form_Load()
   Dim SaveTitle$
   If App.PrevInstance Then
      MsgBox "Cast for Windows is already running." & Chr$(10) & Chr$(10) &
"You cannot run more than one instance."
      End
      'SaveTitle$ = App.Title
      'App.Title = "... duplicate instance"
      'Security.Caption = "... duplicate instance"
      'AppActivate SaveTitle$
      'SendKeys "% R", True
      'End
   End If
   Text1.Text = ""
   Text2.Text = ""
   text3.Text = ""
   Text4.Text = ""
   Picture1.Picture = LoadPicture(DataPath & "castlogn.bmp")
   Task = 0
   TEST.Enabled = False
   Maintenance.Enabled = False
   GoPrint.Enabled = False
   Picture1.CurrentX = 300
   Picture1.CurrentY = 4300
   Picture1.Print "Recruiter: Please enter your password.  Then, press ENTER."
End Sub




Private Sub GiveTest_Click()
   Task = 2
   TEST.Enabled = False
   Maintenance.Enabled = False
   GoPrint.Enabled = False
   Frame1.Visible = True
   Label2.Caption = "Who do you want to test?"
   Label2.Caption = Label2.Caption & CRLF & CRLF & "Highlight a name and click
'OK'."
   Label2.Visible = True
   Command1.Left = 4200
   Command2.Left = 6840
   Command1.DEFAULT = True
   Command1.Visible = True
   Command2.Visible = True
   'If ExamineeTable.EOF Then
   '   MsgBox "There are no examinees currently registered.  Please register
an examinee before giving a test."
   '   List1.Visible = False
   'Else
      Call LoadTable(False)
      If List1.ListCount < 1 Then
         MsgBox "There are no incomplete tests at this time."
         Call Command2_Click
      End If
   'End If
End Sub


Private Sub GoPrint_Click()
   Task = 3
   TEST.Enabled = False
   Maintenance.Enabled = False
   GoPrint.Enabled = False
   Frame1.Visible = True
   Label2.Caption = "Whose scores do you want to print?"
   Label2.Caption = Label2.Caption & CRLF & CRLF & "Highlight a name and click
'OK'."
   Label2.Visible = True
   Command1.Left = 4200
   Command2.Left = 6840
   Command1.DEFAULT = True
   Command1.Visible = True
   Command2.Visible = True
   Call LoadTable(True)
   If List1.ListCount < 1 Then
      MsgBox "There are no examinees with completed tests at this time.  A
test must be completed before results can be printed."
      List1.Visible = False
      Command2_Click
   End If
End Sub

Private Sub HelpContentsPrintingScores_Click()
   SendInt = 201
   Help.Show MODAL
End Sub

Private Sub HelpMaintenancePassword_Click()
   SendInt = 206
   Help.Show MODAL
End Sub

Private Sub HelpMaintenanceUtilities_Click()
   SendInt = 207
   Help.Show MODAL
End Sub

Private Sub HelpTestGive_Click()
   SendInt = 204
   Help.Show MODAL
End Sub

Private Sub HelpTestRegister_Click()
   SendInt = 203
   Help.Show MODAL
End Sub

Private Sub HelpTestView_Click()
   SendInt = 205
   Help.Show MODAL
End Sub

Private Sub List1_DblClick()
   Call Command1_Click
End Sub

Private Sub Option1_Click(Index As Integer)
   If Index = 0 Then
      Option1(1).Value = False
   Else
      Option1(0).Value = False
   End If
End Sub

Private Sub Passwords_Click()
   If AccessLevel < 2 Then
      MsgBox "Access denied.  This requires a level 2 authorization."
      Exit Sub
   End If
   PWord.Show MODAL
End Sub

Private Sub Register_Click()
   Picture1.Cls
   Text2.Visible = True
   text3.Visible = True
   Text4.Visible = True
   Task = 1
   Command1.Caption = "&Start the Test"
   Command1.DEFAULT = False
   Command1.Visible = True
   Command2.Visible = True
   Text2.SetFocus
   Call PrintLine(350, 4200, "Enter the examinee's name")
   Call PrintLine(350, 4500, "and SSN.")
   Call PrintLine(4000, 4200, "Last Name:")
   Call PrintLine(4000, 4800, "First Name:")
   Call PrintLine(4000, 5400, "SSN:")
End Sub

Private Sub Text1_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      KeyAscii = 0
      Call Command1_Click
   End If
End Sub


Private Sub Text2_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Or KeyAscii = 9 Then
      KeyAscii = 0
      Call text3.SetFocus
   End If
End Sub


Private Sub text3_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      KeyAscii = 0
      Text4.SetFocus
   End If
End Sub


Private Sub Text4_KeyPress(KeyAscii As Integer)
   If KeyAscii = 13 Then
      KeyAscii = 0
      Call Command1_Click
   End If
End Sub


Private Sub Utilities_Click()
   If AccessLevel < 3 Then
```

```
      MsgBox "Access denied.  This requires a level 3 authorization."
      Exit Sub
   End If
   ExamUtil.Show MODAL
End Sub


Private Sub View_Click()
   Call ViewTestScores
End Sub
```

VIEWEXAMINEE.FRM

```
VERSION 4.00
Begin VB.Form ViewExaminee
   Caption         =   "View Examinee Record"
   ClientHeight    =   4230
   ClientLeft      =   1095
   ClientTop       =   1515
   ClientWidth     =   6720
   ClipControls    =   0   'False
   ControlBox      =   0   'False
   Height          =   4635
   Left            =   1035
   LinkTopic       =   "Form1"
   MaxButton       =   0   'False
   MinButton       =   0   'False
   ScaleHeight     =   4230
   ScaleWidth      =   6720
   Top             =   1170
   Width           =   6840
   WindowState     =   2  'Maximized
   Begin VB.CommandButton Command1
      Caption         =   "&Close"
      Default         =   -1  'True
      Height          =   495
      Left            =   4080
      TabIndex        =   1
      Top             =   5880
      Width           =   1455
   End

   Begin VB.TextBox Text1
      Height          =   5055
      Left            =   480
      Locked          =   -1  'True
      MultiLine       =   -1  'True
      ScrollBars      =   2  'Vertical
      TabIndex        =   0
      Text            =   "VIEWEXAM.frx":0000
      Top             =   240
      Width           =   8535
   End
End
Attribute VB_Name = "ViewExaminee"
Attribute VB_Creatable = False
Attribute VB_Exposed = False
Option Explicit

Private Sub Command1_Click()
   Unload ViewExaminee
End Sub


Private Sub Form_Activate()
   Text1.Text = SendString
End Sub
```